COTTON CHATS

DRAPER CORPORATION
HOPEDALE, MASSACHUSETTS

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 266. APRIL, 1926.

NORTHROP LOOM WEAVING COSTS ARE THE LOWEST

Textile mills run more Northrop looms per weaver than has ever been proved possible with any other automatic loom ever built. Mill records prove it.

This is true of plain weaves and fancy weaves; in mills where weavers have the assistance of battery hands; in mills where weavers fill their own batteries. It is true with bobbin filling and cop filling.

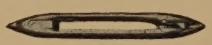
Northrop looms show the lowest cost for weaving on all cloths made with one shuttle—cottons, worsteds, some woolens and a large group of fancy weaves in which rayon and silk have a part.

There are reasons for this Northrop loom superiority in production and weaving cost.

Over 450,000 Northrop looms are running in American textile mills under nearly all conditions the industry offers. During the 32 years since the first one was sold the experience of these mills has been built into the loom. This has been the means of adapting the loom to practically all mill conditions with one-shuttle weaves. In no other

industry must machinery be designed to meet such a variety of conditions as in weaving.

Devices for replenishing filling and stopping the loom on a yarn break were once supposed to make a loom automatic. When buying new looms, some still have this idea. The experience of 32 years has taught us that to weave good cloth with a minimum of attention from weaver and loomfixer, the loom must be automatic from the ground up, from the beam and its let-off to the cloth roll and its take-up.



Automatic weaving brought new methods in the industry. Manufacturers wanted everything that might help them get the full benefit of the new machinery.

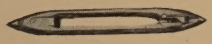
The Northrop loom inaugurated these changes. It has kept pace with them. The experience of making them—the whys and wherefores of each step and the pitfalls to be avoided—is available to the industry only through the Draper organization and the Northrop loom.

No other automatic loom has been run on so many weaves. No other is running on any weave in so many mills, under so many varying conditions. Nowhere else in the world is there so much information on these conditions as in the Draper records.

If you want to weave denims, or sheetings, or fine lawns, or crepes, or Terry towels, or awning cloth, or fancies made from all cotton or from mixtures of cotton and rayon or silk, or any one of practically all common weaves, no one else can offer an automatic loom proved in so many places. No one else has the fund of information and knowledge of the best devices for your weave that our organization can place at your service.

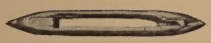
While others are experimenting at your expense, the Northrop loom will be producing cloth at the lowest cost known to the industry.

But past achievements are not enough. We have improvements just out and underway that make the Northrop loom better than ever. They mean still more looms per weaver, better cloth, more of it, less stopping of the loom, less waste, reduced cost of maintenance.



The new Midget Feeler looks like the last word in Feelers. For the first time the mathematical minimum Feeler waste appears to be practically possible. Fixing and repairs are almost eliminated.

Our No. 17 Sliding Bar warp stop motion was fully described last month. With our Rustless drop wires it is working a great improvement in weaving conditions.



We have a Rocker Shaft Box with replacable bushing to take wear on the Rocker Shaft. The bushing is locked to the shaft. It cannot loosen in operation. It has three settings, giving maximum life before replacement.

Replacing worn Rocker Shafts is no longer necessary. Battery troubles due to the gradual dropping of the Lay are ended. Maintenance cost of the loom is reduced.

Our latest Shuttle Feeler Thread Cutter cures the old trouble due to the occasional cutting of the thread when a transfer of bobbins was not completed. The knife is closed only by the transfer mechanism. A mistake in cutting is impossible. Mispicks are reduced.

It also has a double grip to hold the filling end securely until cut by the Temple thread cutter.

Wear on the Shuttle is reduced in our Shuttle boxes with more leather facing and some changes in design. Wear from the Reed is about all that is left and this is beyond our control.

Our Cast Iron Shuttle Eye has been improved and the Shuttle somewhat modified. Excellent weaving results have followed these improvements.

Bobbins with properly spaced rings and refinements developed by our experience are desirable for the best results on Northrop looms. Bobbins with both top and bottom bushings are showing operating savings that more than offset first cost.

We have a new Spring Top Harness motion, a new Parallel Spring control and lock, a simplified Foot Let Back for our Take Up Motion.

Our latest Yarn Beam Bearing locks the beam on the large diameter of the gudgeon. It overcomes jumping of the beam due to wear on the gudgeon.

The lowest cost weaving, per pound or per cut, in this country is being done on Northrop looms. In fact, weaving costs on Northrop looms are lower in many places in this country than weaving costs on any other looms anywhere in the world, in spite of the low wages in some Asiatic countries. No other loom has ever met the Northrop cost of weaving.

Northrop looms now being built will surpass their predecessors. More of them can be operated per weaver. Less fixing will be necessary. Cost of repairs will be less than on any other automatic loom. They will make new records in weaving costs.

There are looms sold at a lower price than the Northrop. But first cost is nothing if your competitor can produce every yard of cloth at less cost than you, not only today, but year in and year out.

Can you afford, for a small saving in first cost, to buy a perpetual handicap in your weaving equipment?

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 267. MAY, 1926.

A FEELER THAT WILL NOT MAKE EXTRA WASTE

The loom Feeler problem is solved.

The No. 32 Midget Patent Feeler is made to slide only on the bare barrel of the bobbin.

Setting the Feeler for this result is quickly and easily done.

There are no complications of adjustment; no need of variations for different yarns.

This means that Feeler waste may be limited to a predetermined bunch of reserve yarn.

The Feeler keeps its adjustment without change.

It cannot make extra waste.

It may make mispicks if the yarn package on the bobbin is not properly built.

To build a proper yarn package we offer our No. 22 Burdett Bunch Builder which builds the proper bunch. The proper bunch must do two things. It must contain enough reserve yarn to prevent a mispick due to weaving off before the Feeler completes the transfer of the bobbin; and with this assured, the reserve must be as small as possible that waste may be kept at a minimum.

We figure that four picks make a safe reserve of yarn for the bunch.

With a bunch of this size on properly built bobbins and with the Midget Feeler properly positioned to the bobbin, the waste on each and every bobbin will be four picks of filling or less.

That is our solution of the Feeler problem.

Having provided the Feeler that will make only the amount of waste for which it is set and the Bunch Builder which, working with that Feeler, makes the mathematical minimum of waste a practical everyday achievement in your mill, we feel that the rest is up to you.

The adoption of these devices, getting the most out of them in the way of better cloth, a saving in waste, reduced cost of producing goods, is up to you and your mill organization.

Being up to you, is it worth your while to secure the new equipment and adapt it to your conditions?

You can easily figure it out.

What is your present annual loss from Feeler waste? How much would it be reduced if it was only what the Midget Feeler makes?

How would that saving affect your profits?

How long would it take you in savings made to pay for the new equipment?

The reduced cost of Feeler repairs and loomfixing would pay you a good return on the investment. The saving in Feeler waste would be "velvet."

You can figure it out for your own mill. Prices of your goods, cost of your product and your profits are all at stake.

ADDS MORE LOOMS PER WEAVER

Ask your weaver how much time she would save when a warp end breaks

If she had an accurate device for detecting the wire that is down, whether it is caused by a broken or a slack end;

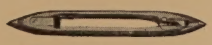
If, when the broken end was found, harnesses and Lay were in such position that it could be drawn in without releasing the brake and turning the loom over;

If she could then start up the loom without either touching the Lay or pushing the Shuttle into the box.

Our new No. 17 Sliding Bar patent warp stop motion and the Filling Brake that goes with it give positive control of the position of the Lay and Shuttle when the loom is stopped by a warp break. When these are properly set, the loom stops with everything ready for drawing in the end and starting up again without touching the Lay or Shuttle or any other preliminaries.

When the loom has stopped, one of the levers at the end of the stop motion indicates the bank on which the wire is down. Movement of this lever by hand immediately locates the broken end.

These new devices, with our Rustless drop wires and the elimination of lint-gathering, have added one more reason for more looms per weaver.



More looms per weaver.

Just our favorite way of expressing an ambition of nearly forty years—first to produce an automatic loom and then to make what we had produced automatic to a greater and ever greater degree.

It visualizes to you, mill owners and operators of weaving machinery, the concrete results in reduced cost of production of textiles that have resulted from the progressive steps in the attainment of our ambition.

More looms per weaver.

These four words have also marked the milestones of your progress as well as ours. But for the courage and initiative of practical and progressive mill men who dared to attempt what their neighbors had not done our improvements in machinery and our preaching on their possibilities would have been in vain.

More looms per weaver.

Once that meant 16 looms. When it reached 40 they talked about the limit of human endurance. Then some one discovered that not human endurance but the exercise of brain power in finding ways to use to the full the possibilities of a perfected loom was the way to greater achievement. And now the high mark of actual attainment in various mills runs all the way from 50 to 100 looms per weaver.

"More looms per weaver" does not mean more work per weaver, but less.

The machine does an ever-increasing percentage of the work—with an ever-increasing degree of perfection.

Our latest improvements open up new possibilities in the way of "more looms per weaver," both for the courageous who keep a jump or two ahead of the procession and for those who have been content to stick to a more conservative course.

Mills with Northrop looms are running more looms per weaver than has ever been proved possible with any other loom ever built.

With our latest improvements, the limit is beyond anything yet attained.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 268. JUNE, 1926.

YOU DID IT ON LOOMS WHY NOT ON WARPERS?

As an up-to-the-minute textile manufacturer, you have probably had someone on the job of studying the job of more looms per weaver.

If the job has been well done, you have found many ways of increasing the volume of production per unit of labor cost.

As the sum total result of your efforts and those of other progressive manufacturers who have been doing the same studying, ninety or 100 looms per weaver appear more practical today than did the 50 looms per weaver that proved an eye-opening experiment two years ago.

While you have been using the scorecard method to get the batting average of your looms and the teamwork of your workers, you have probably discovered many things in your carding, spinning, spooling and warping that could be changed with beneficial results in the weave room.

Have you tried the scorecard method—studied the job in these preparatory departments with reference to production per unit of labor there?

Your warper-tenders, for instance, probably think they are doing a day's work.

What does the scorecard show? What are they doing that could be eliminated by a better knowledge of why the machines stop?

What would be the effect if you were equipped to use larger beams and spools with greater length of yarn?

What would be the gain with new devices to insure accurate yarn measurement to reduce Slasher waste?

Are your creels or skewers warped or out of line? Is the spool head rubbing against the stile?

Do you use porcelain creel steps for heavy spools, or iron steps that are suitable for light packages only?

Try the scorecard on your warping. We cannot tell you how many more Warpers your Warper-tenders should run; nor what changes in methods or equipment you should have for an increased production per unit of labor.

But the scorecard can do this, if properly used.

WE KEEP A SCORECARD

Our G model Warper for medium weight yarns, with Fluted cyclinder and Rhoades-Saulnier device, resulted from our own scorecard, used to indicate to us the exact needs of the mill in the way of improved machines.

Inequalities in length of yarn on Warper beams were causing too much waste at the end of Slasher runs.

The Fluted cylinder, with its better grip on the yarn, gives the beam a practically positive drive without slippage. Since it also drives the clock, it is as nearly certain as possible that yardage registered and actual length of warp on the beam will be the same.

But the human element enters in. The girl may restart the Warper without resetting the clock.

The Rhoades-Saulnier device prevents this mistake. It automatically locks the Warper when the yardage has been attained for which the clock was set. It does not interfere with restarting from stops due to broken yarn.

The Fluted cylinder may be had on any of our models that measure from cylinder. The Rhoades-Saulnier device is a regular feature of all our new Warpers.

We have an entirely new Warper for heavy loads.

The I model with regular equipment was designed to take a beam with 32″ head for coarse yarns.

But coarse yarn on large packages often results in such heavily loaded creels that friction and drag cause a slipping cylinder and too much yarn tension. Our U model has a Measuring Roll double the usual size, and the yarn contact surface is more than half of its half-yard of circumference. This roll is covered with cloth and positively driven, so that it relieves the cylinder of most of the work of drawing the yarn.

To regulate the comparative draw of the measuring roll and cylinder to the requirements of any particular yarn, there is an ingenious cone motion adjustment. It has most excellent results in the quality of warp yarn produced.

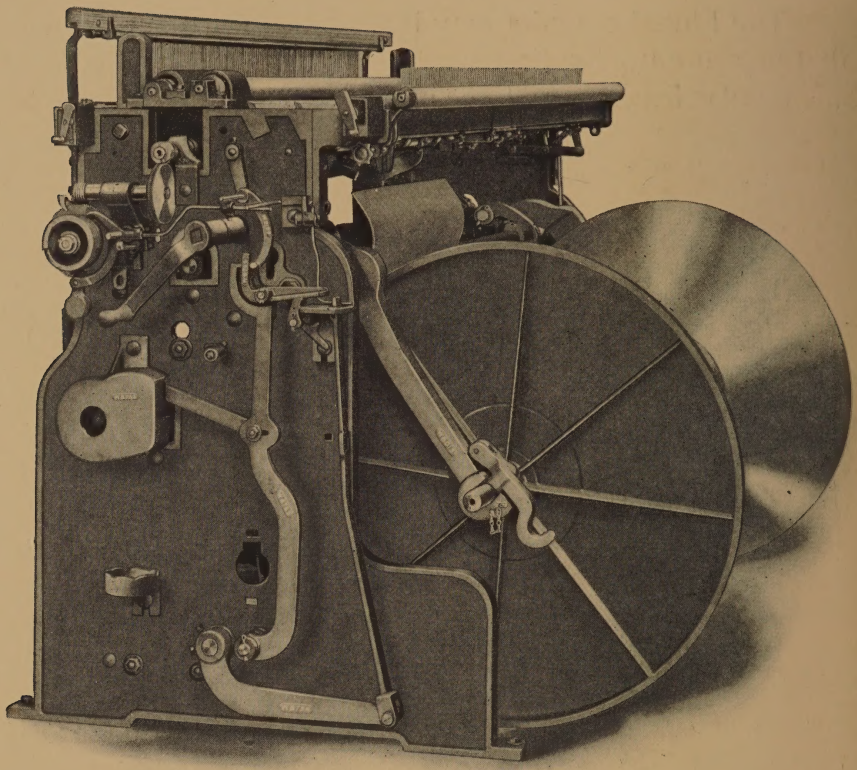
This model and its special devices are especially good for ball warping. We show a picture of the U model as set up for beam warping.

For beams with a small number of ends, our comb traverse motion so regulates the laying of the yarn that the beam is not full of ridges and hollows.

For small, narrow beams, we have a small cylinder to be placed on top of the regular cylinder.

To reduce kinks we have balance wheels that may be be applied to any model.

For fine yarns our F model, with 12″ light beam barrel, heads up to 24″ and roller bearings to reduce friction, is especially equipped for its exacting job.



Our New U Model For Heavy Loads

Whether you need any of these later devices is not for us to say. Studying the job with the scorecard will enable your warper-tenders to run more machines.

This will pay for your time and trouble and give accurate information on conditions.

If it also shows you the possible profit of greater lengths of yarn on your beams, of larger spools, of accurate measuring devices or the need of reducing kinks, we are ready to co-operate.

The scorecard did it on looms. Why not give it a chance on your warping?

COTTON CHATS

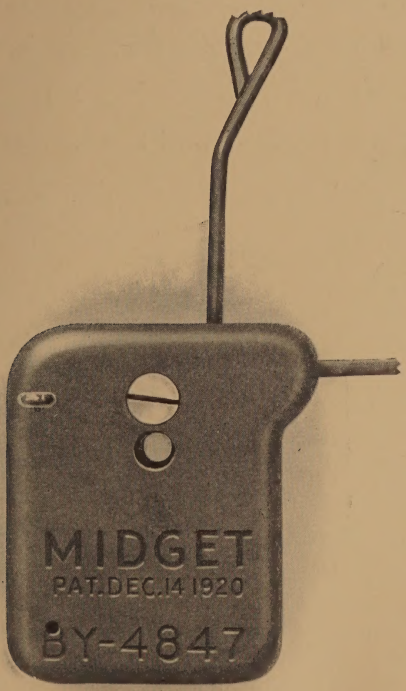
TRADE-MARK REG. U.S. PAT. OFF.
AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 269. JULY, 1926.

MORE CLOTH, LESS WASTE FROM SAME AMOUNT OF YARN



No. 32 Midget Patent Feeler

See Pages 3 and 4

INSTRUCTIONS FOR APPLYING

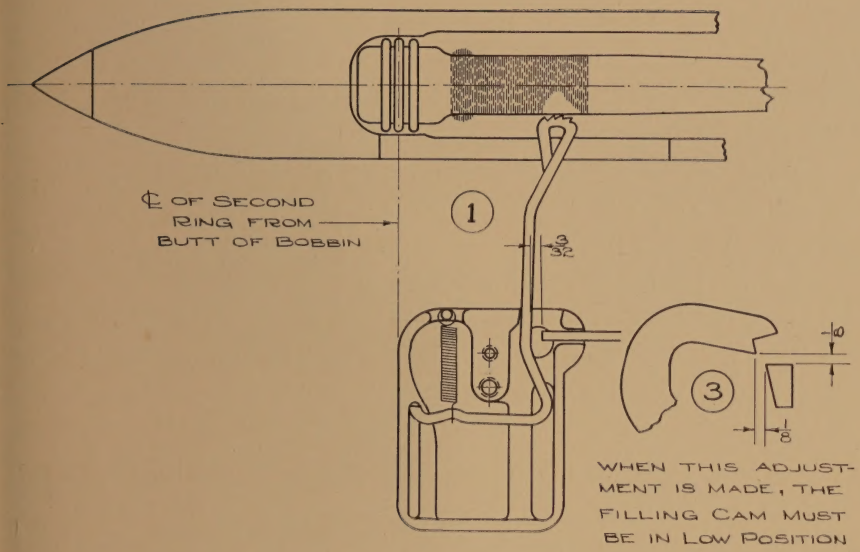
NO. 32 MIDGET PATENT FEELER

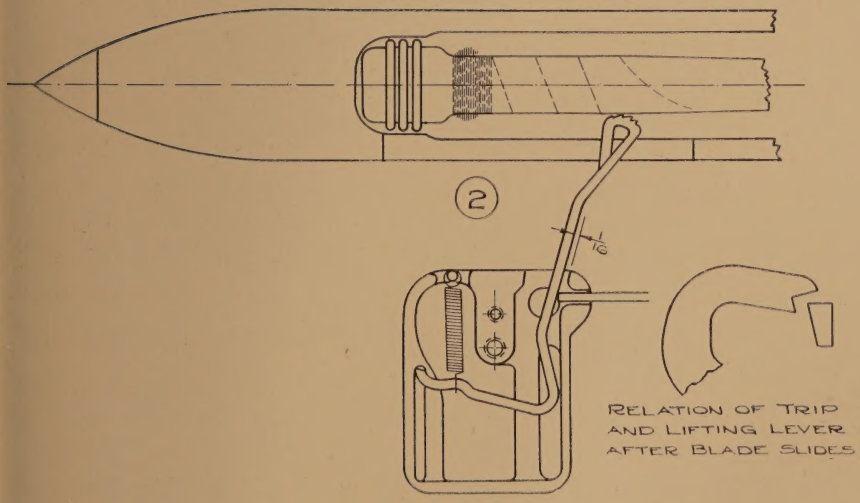
Place an empty bobbin in shuttle with shuttle in the shuttle box opposite the battery. Fasten the Feeler case to the Shipper Lock at approximately right angles with the Lay, with the outside edge of the Feeler case in line with the second ring of bobbin in shuttle. Bring the Lay forward until the bobbin touches the Feeler blade. Adjust height of Feeler so that when the Feeler blade is against the bobbin, it will be slightly above the center of the empty bobbin. Adjust the connecting wire so that the Feeler blade slides about 3/32" in case before engaging the connecting wire. (See sketch No. 1.) This is necessary to insure that full bobbins will not be changed.

Place the Lay on the front center. Set the feeler case forward or back until the feeler blade moves sidewise on the empty bobbin to within about 1/16" of the end of the slot in the feeler case. (See sketch No. 2.) This clearance prevents the feeler shaft, after completing its sidewise movement, from binding against the end of the slot when Lay goes over the front center.

The feeler trip and lifting lever should set so that the engaging points are about 1/8" apart in a horizontal and vertical direction. (See sketch No. 3.)

Nothing about this Feeler calls for special setting of the Filling Cam. Set the cam in the usual way for non-feeler looms.





How much filling goes out of your mill as feeler waste in the course of a year?

How much would you save a year if a large part of that waste went out of your mill in good cloth?

How much does it now cost you to remove that waste from your filling bobbins?

How much would you reduce this cost if waste was never over four or five yards on any bobbin?

The practical answer to these questions is found in the No. 32 Midget Patent Feeler. It has eliminated feeler waste as a mill problem.

This Feeler always works. It never misses fire. The ejected bobbins are as much alike as peas in the same pod. There is never more than the maximum waste for which the Feeler has been set—which may be four or five yards according to the width of the loom.

There is only one condition for obtaining these maximum results.

Bobbins must be prepared with the proper reserve yarn when the Feeler slides on the bare bobbin barrel. The No. 22 Burdett Patent Bunch Builder on your Filling frames insures this minimum reserve and maximum results.

And incidentally, loomfixers find they have nothing to do to keep the Feeler in repair and working order.

Weavers find the same blade is used for coarse and fine cotton yarns, rayon or silk; that all are equally well treated by the light touch of this wonder-working Feeler.

The Midget Feeler adds to the weaving range and economic supremacy of the Northrop loom.

It is another step toward perfection in automatic weaving.

It decreases labor and increases the capacity of the worker.

It means thousands of dollars saved annually in waste by the textile manufacturer.

It means other thousands in increased percentage of cloth from the amount of filling yarn made.

Why spin a lot of yarn to be thrown away as waste? It should go out of your mill in good cloth.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 270. SEPTEMBER, 1926.

BOBBINS AND SHUTTLES SHOULD FIT EACH OTHER

Draper bobbins fit Draper shuttles.

Draper shuttles fit Draper bobbins.

Both are designed by the builders of the Northrop loom to meet weaving conditions on Northrop looms.

Unless bobbins and shuttles fit each other exactly, troubles develop in weaving that reduce production; that cut into mill profits; that reduce weavers' wages.

Shuttles and bobbins do not fit exactly if there is the slightest variation—even thousandths of an inch—in spacing of bobbin rings or milling of slots in shuttle springs; if slots are not milled to the exact shape and diameter of the bobbin rings.

We designed the original automatic loom shuttles; the original automatic loom bobbins. We alone have the original figures and those of the changes that have been made in bobbin butts and shuttle springs to meet the various conditions of different batteries on Northrop looms. Bobbins vary for different batteries. Bobbin rings must fit the transfer mechanism. We have the true figures for both bobbins and shuttles for the Northrop looms in your mill. No one else has these figures.

We know from experience what to guard against in manufacture and inspection before shipment. No one else has our complete knowledge of all conditions for our looms.

We have placed on the market over 2600 different kinds of shuttles, all of which differ from all the others in some particular for which there is a reason. In ordering from us, you are sure to get what you want.

We have no complete record of the total number of different types of bobbins we have made. We do have a complete record of all standards used, of what you have had, of what will fit your looms and your shuttles.

Other makers can have obtained their figures only by measuring samples made by someone else. The use of a slightly defective sample or the slightest error in measurement establishes a wrong standard. Natural inequalities of manufacture on top of a wrong standard multiply differences.

Your looms may call for something different from your neighbor. Other makers do not know this and may sell you shuttles that "look like" what you have. Our records protect you when you order from us.

SHUTTLES WERE O K—BUT

A few years ago we were visiting a large mill whose manager was among the most successful textile men in the country. He regularly bought Draper parts for his looms, all of which were Northrops. But he had been persuaded to buy a sizable quantity of shuttles on which he felt sure he had obtained a bargain. He showed us the shuttles and asked our opinion of them.

We agreed that they were good looking shuttles, but after applying our tests told him he ought to be having certain troubles in his weave room. "Well," he said, "we have been using those shuttles three months without a single complaint from the weavers; in fact they like them." And we answered: "Then you must have some miracle men in your weave room."

The next day he ordered those shuttles out of the looms and the use thereafter of Draper shuttles only. He had gone through his weave room after we left, found just the troubles we had indicated; but his fixers were blaming everything but the shuttles. A change to Draper shuttles eliminated the troubles. "And I can afford to lose that order of shuttles," he added, "to get rid of the troubles they caused."

Are you using shuttles or bobbins that look good, but are really handicapping your weavers?

SHUTTLES MADE FEELER WASTE

We were called to a mill making too much Feeler waste. They had an older style of Feeler where proper adjustment of the parts made quite a difference in the amount of waste made. We tried every setting likely to produce results and were stumped until as a last resort we examined the shuttle, which was not Draper-made. A peculiar defect of the shuttle spring was destroying any effect from the adjustment of the Feeler.

They discarded those shuttles and put in Drapers and cut down the waste as desired.

BLAMED THE BOBBINS—SHUTTLES WRONG

We shipped a large order of bobbins. The mill notified us they were not right. Examination of our records and tests of bobbins at the mill by one of our men proved that the bobbins were all right.

But they did not fit the shuttle. The looms were making smashes or having other troubles of a less serious nature.

The shuttles were a new lot, ordered from a good fellow whom the purchasing agent desired to give a share of his business. It was quickly shown that the shuttles did not fit the new bobbins nor any other bobbins the mill had on hand.

The shuttles looked good. Inspected by themselves they were examples of good workmanship. But they proved for that mill a costly experiment in trying to get something "just as good."

If you use Draper bobbins, use Draper shuttles.

If you use Draper shuttles, use Draper bobbins.

They are made to the same standards. They fit each other.

If you have Northrop looms, use both bobbins and shuttles made by the Northrop loom builders.

The Northrop loom is more automatic than ever before. That is why mills are finding out that more and more looms per weaver are possible.

The loom does an increasing amount of work that once took the time and attention of the operator.

Increased capacity and versatility of the loom call for a finer adjustment of all parts in design and building. Repairs must preserve this finer adjustment. You cannot take chances on repair parts or supplies that were possible with the common loom; or even those you could get away with on the earlier automatics.

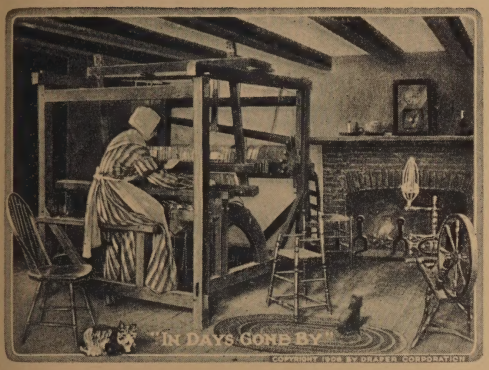
If you buy Draper supplies and repair parts, they fit each other and the looms.

They insure steady running of the looms with a minimum number of stops.

They reduce the cost of operation and upkeep.

They give maximum production.

The experience of the users of over 430,000 Northrop looms is built into them.



COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 271. OCTOBER, 1926.

HOW TO SET AND RUN NEW WARP STOP MOTION

Our No. 17 Sliding Bar Patent Warp Stop Motion is a great improvement over any other warp stop motion we ever built. Being different, it naturally calls for new rules for setting. These rules are very simple.

In setting, there are two things to remember:

All moving parts are set on the center of their movements.

The knock-off parts are trigger-set—ready to move when tripped—with no lost motion in the connections so that action may be immediate and positive.

Moving parts set on center of their movements include Cam Follower (J on page 3) and Oscillator Cam; Oscillator Arm (N); Feeler Bar Finger Base (O), which controls movement of Sliding Feeler Bars; and Sliding Bars in relation to the notched Feeler Bar Holder.

Trigger-set knock-off parts are Plunger Finger (D) and Knock-Off (C), between which and plungers on either end of Knock-Off Rod there should be no lost motion.

The following directions for setting are but the practical application of these simple rules.

INSTRUCTIONS FOR SETTING NO. 17 SLIDING BAR WARP STOP MOTION

Place warp stop motion sufficient distance from back harness to allow for proper shedding.

Adjust height of warp stop motion so that, when shed is open, no harness will lift drop wires until bottom of slot in wire touches under side of feeler bar holder (A). A small clearance is always desirable here to prevent any lifting strain upon the bar.

Set the lay in extreme back position with shuttle in right hand box.

Loosen set screw and push plunger holder (B) and plunger against under side of knock-off (C) until upper side of knock-off is in line with top of knock-off rod end, as shown. Tighten set screw.

Loosen set screw in feeler bar finger base (O) and press plunger holder (F) and plunger against plunger finger (D) until plunger finger rests against feeler bar finger trips (E). Do not push plunger back into holder or knock-off will be raised at C. Tighten set screw.

Set oscillator cam so that follower (J) will be at center of motion as shown.

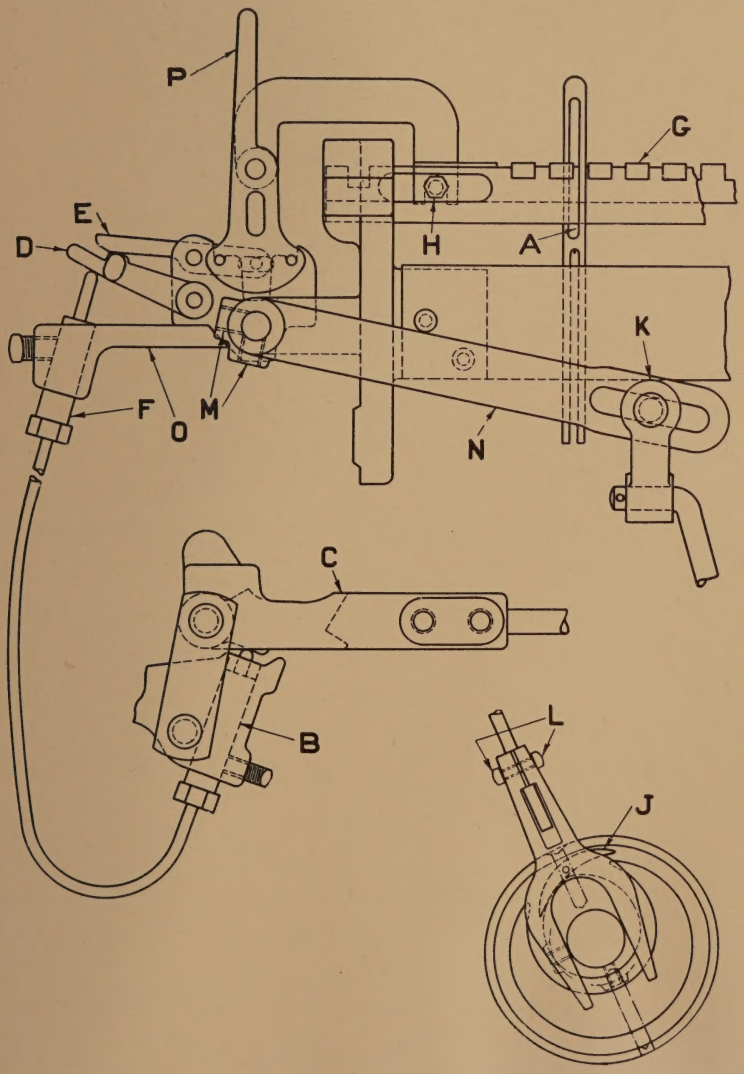
Set oscillator rod end (K) central with slot in oscillator arm. Through cap screws (L), adjust rod so that top of oscillator rod end (K) will be in line with bottom of front warp support.

Loosen set screws (M) in oscillator arm (N) and set sliding bars as follows: Have teeth (G) of sliding feeler bar central with notches in feeler bar holder; that is teeth should completely close notches. Have studs (H) central in slots of feeler bar holder, with feeler bar fingers (P) vertical.

Tighten set screws (M), being careful to preserve the settings as made.

When these adjustments are made, the travel of teeth of the sliding feeler bar should be the same on each side of the notches in the feeler bar holder.

With our new brake (always furnished on new looms) and the above setting of the warp stop motion, the loom will always stop with shuttle in left hand box when a warp thread breaks.



REDUCES WORK OF WEAVER

The Sliding Bar Warp Stop Motion and new brake that goes with it reduce by more than one half the work of the weaver when a warp break occurs.

The loom stops with the shuttle in the left hand box. There is nothing to do but find the broken end, draw it in and start the loom. The displaced Feeler Bar Finger shows the bank on which the wire is down, and movement of the finger immediately locates the wire.

There is no time lost in turning the loom over or throwing the shuttle across the loom.

This increases the product per loom and adds to the number of looms a weaver can tend.

There are other advantages.

There are no underneath parts to catch lint.

Four banks of wires adapt the loom to high sley weaves; one or more banks may be disconnected by a flip of the finger.

The trip for the knock-off is at the top instead of bottom of the wire. Drop wires are not chewed up.

A lighter drop wire than ever before can be used. A change to lighter or heavier wires may be made by merely substituting the wires desired.

Either closed or hairpin drop wires may be used.

No resetting of the cam and knock-off is necessary after putting in a new warp.

The knock-off is trigger-set and quick-acting, rarely gets out of order; is easily reset if it does.

Compact construction eliminates the necessity of moving the yarn beam back as was often necessary with a large number of harnesses or when four banks were used for high sley weaves.

Finding the end down is positive and immediate.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 272. NOVEMBER, 1926.

KEEPING FEELER WASTE AT A POSITIVE MINIMUM

It is now possible to keep Feeler waste at a positive minimum.

The Midget Feeler slides on the bare bobbin—not on the yarn.

It acts the first time it engages the bare wood of the bobbin. It will not operate before this point in the weaving off of the bobbin is reached.

Because it acts thus positively, the amount of waste may be determined and absolutely limited to the amount of yarn on the bobbin back of the Feeler contact point when the Feeler operates.

The minimum amount of such reserve yarn to insure good weaving is easily worked out.

Providing this reserve at the proper place on the bobbin is a matter of building proper bobbins in the spinning room.

And we have a new tool to enable the spinner to build these proper bobbins.

WORKING OUT THE MINIMUM

Before building a bobbin with the proper amount of reserve yarn, we must know, as a goal to be obtained if possible, the theoretically least practical filling waste. Let us reason a bit from experience.

Theoretically the least practical filling waste is something less than from four to five yards per bobbin on a loom of the average width.

We say "something less" because it is not possible mechanically for a Feeler to prevent a difference in waste on individual bobbins of from a few inches to twice the width of the loom.

This variation comes because when a bobbin has been woven off until only a predetermined amount is left, the shuttle may be in either box or moving in either direction across the loom. The Feeler cannot operate until the shuttle is opposite the Feeler blade; and the bobbin is not ejected until the shuttle has again crossed the loom to the right hand box.

Two picks to cover variation of position, one to get the shuttle into the right hand box and a reserve to insure proper laying of the last pick are therefore the necessary amount to guard against a mispick.

This calls for from four to five yards of yarn back of the point at which the Feeler can operate.

More is unnecessary for the right Feeler.

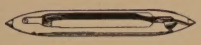
Less would be dangerous for any Feeler.

The Midget Feeler is designed to secure this least practical filling waste.

It can do this because it slides on the bare bobbin—not on the yarn; because it operates thus accurately without attention from the weaver, and once set without attention from the fixer except in case of accident.

It will do it—always and without fail—if the bobbin is properly built with the proper reserve of yarn in the proper

place when the uncovered barrel of the bobbin is presented to the Feeler.



The Midget Feeler can do an ideal job, but only when proper bobbins have been prepared by the spinner.

To enable spinners to prepare these proper bobbins with proper reserve in the proper place we have designed and perfected the No. 22 Burdett Patent Bunch Builder.

Attached to your spinning frame, it builds a bunch of any desired amount of yarn and builds it properly.

Bobbins spun with Burdett builders and used with Midget Feelers show filling waste that never exceeds the bunch of reserve yarn and is usually from a few inches to twice the width of the loom less than that amount. In both theory and practice this is the low limit in Feeler waste.

NO. 22 BURDETT PATENT BUNCH BUILDER

The Burdett Bunch Builder may be attached to the ring spinning frame to build a predetermined reserve of yarn on filling bobbins before the regular traverse of the bobbin builder is allowed to operate.

This bunch of yarn is built back of the point on the bobbin where the Feeler engages. It must contain enough yarn to provide for proper laying of the filling between the time the bobbin barrel is uncovered to the feeler and completion of the bobbin transfer.

The mechanism by which this is done is as follows:

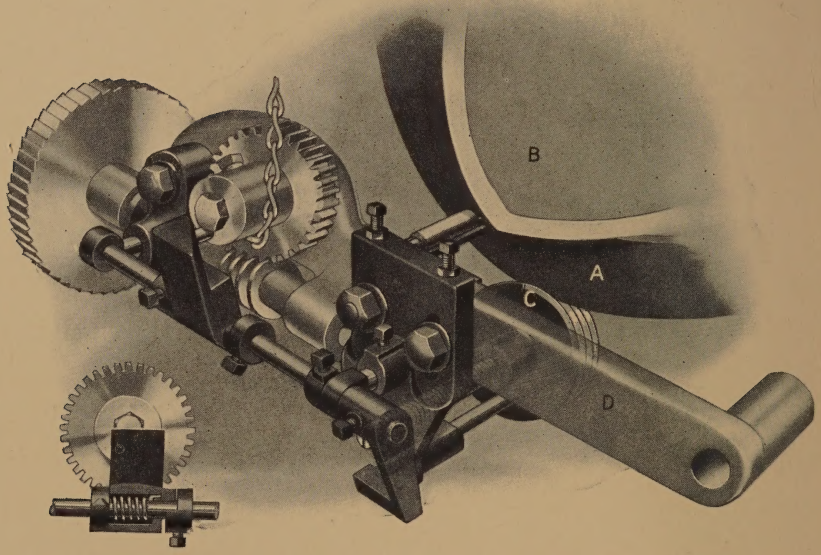
A disc (A) bolted to the heart, or builder cam (B).

A worm measuring roll (C), on which the disc runs until a bunch of the desired amount of yarn is built, when the disc runs off the end of the worm and allows the cam follower on the builder arm (D) to engage the heart cam, when normal building of the bobbin begins.

A means of throwing the worm into action under the disc before starting up the frame. This mechanism operates while resetting the rail.

Our picture gives a good idea of the Burdett Bunch Builder, but the actual detail of parts will vary for various makes of spinning frames.

The heart cam (A) and builder lever (D) of the frame are shown in ghost. Darker parts show the mechanism of the Bunch Builder. Parts attached to the builder lever



throw the worm into action and may be set so that the disc will engage the worm at the right point to build a bunch of the predetermined yardage.

To set Bunch Builder the worm is adjusted by its threaded and shouldered stud until the desired thread of the worm will engage the disc.

The particular point on this thread where the disc shall engage to give the correct yardage is regulated by setting a counterweight (not shown in the picture).

Once set, the bunch builder operates with the starting of the frame.

COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 273. JANUARY, 1927.

A BRIGHTER NEW YEAR FOR TEXTILE INDUSTRY

The year 1926 has been the most trying the textile industry has ever known. Not the most disastrous, for losses have not been so general nor so large as in some other years. But trying because it marked the extension of a depression that had already lasted longer than any that preceded it; because during most of the year the turning point appeared far away in a distant future; and because this depression in textiles has continued while other industries and the country as a whole were enjoying a marvelous prosperity.

To have his own line of business in the dumps while all others are booming is a situation to try the courage of the most optimistic business man.

During the year a few have given up; some have been forced out by circumstances. But on the whole the industry has met the situation with courage and a revival of initiative that has been characteristic of American business when difficulties loomed large.

If textiles would not revive with other business, there was something wrong.

What?

That was the business of those concerned to find out, they determined. Then they organized to that end.

In putting their heads together, they found they knew some of their troubles and how to overcome them. They propose to do more conferring and searching and researching.

Meantime action has given a new confidence, and confidence gives a firmer grip upon determination. If the textile business will not come back of itself, they will go after the business in a new twentieth century way and put it back on its former high plane.

And so the new year gives promise of better things for textiles. This is indicated by what we hear from all sides, by market reports, by industrial forecasts. We find good evidence on our own order books. We are dependent upon the prosperity of the textile business, upon the faith and confidence of textile manufacturers in the immediate future of the industry.

Our orders for new machines and improved devices show an increasing number of manufacturers planning for something worth while ahead. They think and talk of the future with a confidence that is reassuring.

We have said something about the realization of the need of changed methods that the depression has brought home to the industrial leaders and of the promise this gives for firmer foundations for the industry in the years ahead.

We have on our part used the days of quiet business in redoubled efforts to perfect weaving devices on which our experts have been at work for years.

The fruition of some of these long labors has come fortunately in a very satisfactory way.

The Feeler problem is solved.

The new Midget Feeler has put an end to your Feeler troubles.

With this Feeler installed and set, you can forget it. Waste problems and Feeler troubles are banished from the Weave Room.

All you have to think about now is the spinning; the preparation of proper bobbins by the spinner.

And our research department has a new tool for this in the Burdett Patent Bunch Builder.

Attached to your Spinning Frame, it builds a bunch of any desired size, builds it properly and in the right place—except where the yarn breaks down in starting the frame.

For this trouble, it is easy to piece up on bobbins previously provided with a bunch. Such bobbins may be obtained from the cans in the weave room; or if you are running with a very small reserve so that the bunch left is not large enough to tie to, by specially winding bunches on a limited supply.

Our Patent Sliding Bar Warp Stop Motion and the new brake that goes with it to stop the loom with the shuttle in the left hand box reduce by one-half the work of the weaver when a warp break occurs, increase the product per loom and add to the number of looms a weaver can tend.

The year has brought many other improvements in our looms, all calculated to contribute to the perfection of operation and reduction of labor required from the operative. The devices mentioned are the outstanding features. They differ from some of the others because they can be applied to looms now in the mills. They are of interest to more mill men than the improvements that come only on new looms.

In our November Cotton Chats, in a description of the new Bunch Builder, the cut showed a circular disc bolted to the heart cam. We should have explained that for coarse yarns we use a scalloped disc to spread the bunch over a little more space on the bobbin. This makes a better bunch for these yarns.

We furnish either the circular or scalloped disc according to the filling yarns used.

Now and then someone wants a Feeler that slides towards the butt of the bobbin instead of away from it.

The Midget Feeler will work either way.

To make it slide towards the butt, it is necessary only to turn the Feeler box over and secure from us the special connecting rod for this arrangement.

WISHING YOU A HAPPY NEW YEAR

The beginning of 1927 finds the textile industry conservatively optimistic. We all hope the worst has been passed, that there is a happier story of material prosperity ahead.

No one expects a boom, but there are substantial reasons for the hopes that breed the confidence we find so encouraging at the start of the new year.

That our hopes and yours may be justified by events is our New Year's wish for the textile industry.

COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 274. FEBRUARY, 1927.

THE NORTHROP LOOM HAS RAISED LABOR'S WAGES

The following statement is credited to one of the leaders of union labor: "The introduction of automatic looms in the New England district, while they have materially assisted the employer, have not in a like manner assisted the worker."

There is a direct answer to this statement that the worker has not been helped by the automatic loom.

Go to Fall River, with more common looms than any other American textile center. Get the average wages of common and Northrop loom weavers. Based on a full week's work, the difference will be around six dollars per week in favor of the weaver on automatics.

But this is only part of the story.

Weavers on common looms receive higher wages than they would get but for the automatic loom.

Improved machinery, with each step forward, has gradually lifted the wages of all workers, those who were not, as well as those who were, employed upon the machines improved.

In the 40's of the last century, just after the Draper business had been moved to Hopedale, weavers worked 12 hours a day in Lowell for $3 per week.

During the next 50 years, improvements in textile machinery came largely in spinning and other preparatory processes. Looms showed only minor improvements. Yet, just before the introduction of the automatic loom, weavers' wages had risen to $9 per week of 60 hours.

Then came the Northrop loom. Today common loom weavers get twice as much as in 1890, and weavers on Northrops from two and a half to three times as much.

SAME AS OTHER INDUSTRIES

But the textile industry is not the only one where we have increased wages and shorter hours!

Right.

Because it is not the only industry with improved machinery. If it were, there would be less benefit to textile workers from the Northrop loom.

Workers directly concerned are not the only ones to gain by improved machinery. Part of the savings from Northrop looms, or any other improved machinery, has gone to labor still employed on older machines; some to unskilled labor; some to workers in other industries.

Most American industries have improved machinery. Cumulative distribution of its benefits enriches the entire community. With decreased costs to the consumer and increased use of products, industry prospers. There is more work to do, wages and standards of living go up, and even hand-workers come in for their share.

Speaking in terms of the general standard of wages, industrial records show that higher wages never precede increase in production per unit of labor. They have followed such changes, though not always at once.

It is true selected workers have for a time secured higher wages on limited production—always at the expense

of fellow laborers in other industries. Such cases usually correct themselves through the working of an inexorable economic law; or, if persisted in by strong arm methods, endanger the nation's prosperity.

Increase in wealth comes from three sources:

From products of the earth through agriculture, mining and other methods of extraction.

From labor upon these products that puts them in the form to be of use to society.

From commerce which makes these products available where they may be exchanged for the largest value in other commodities needed for the well-being of society.

There are no other sources. Out of these must come a people's annual income, from which all business profits and wages must be paid.

All brain-workers and manual laborers, all capital and machinery that contribute to any of these forms of wealth-increase are producers.

Upon a country's natural resources, its number of producers and degree of efficiency of these producers depends the wealth-increase of that country.

Never has manual labor alone gained a considerable degree of wealth for the laborer. Combined with capital and brains, it evolved machines and began to improve its material welfare.

Engineers from Europe recently declared that the efficiency of our machines and the proficiency of our workers in using them explained our high wages.

We are a land of producers. We have no idle nobility, no great standing army. Our men of wealth are actively engaged in business as producers.

Every idle dollar, every idle brain, every idle pair of hands reduces the wealth-production of the nation. Every producing unit of capital, management or labor has its efficiency increased by improved machinery.

Upon these things depends the standard of living of skilled and unskilled labor alike.

LABOR'S SHARE

The Draper Corporation and its predecessors have been busy developing labor-saving machinery for textiles since the early days of the industry in this country.

Our loom temple, improvements in mechanisms of the common loom, devices and machines that increased product and reduced work in warping and spooling, the great advance in spinning rings and high-speed spindles—all contributed to the advance of the industry before we brought out the automatic loom.

More than one hundred years ago our first temple allowed a weaver to run two looms instead of one.

Today there is a mill where weavers run a hundred.

We speak from experience when we talk about what all these things have meant to labor.

During the past dozen years, conscious that full benefit of the Northrop loom was not being reaped, we have made a drive for "more looms per weaver"—not by driving the help but by organizing the work.

We have outlined plans for hundreds of mills—but not one where we did not provide for giving the weavers part of the savings made.

We do not know of one that did not result in higher wages to the weavers.

More manufacturers today than ever before believe in high wages. They know what purchasing power means.

They have been willing to buy improved machinery, to study plans for its efficient use, that they might keep up a high level of wages.

In some cases they have had the opposition of labor leaders who cannot realize that increased production per unit of labor is the only lasting basis for increased wages and shorter hours.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 275. APRIL, 1927.

TO STAY IN THE GAME SCRAP THE OLD LOOMS

When you hear that your competitor's weavers are running 36 or 48 or 72 or 100 looms each, what do you do?

When satisfied that your machinery is too much out of date to enable you to meet present day competition, what do you do? Buy new equipment?

"My mill hasn't the money."

The man who said this a few years ago, his mill and his stockholders have less money today than they had then. They have allowed a good investment to fade away.

The textile industry is one of the oldest industries in this country. Age accumulates traditions.

Traditions usually mean ruts, and ruts are the dry rot of industrial progress.

The textile industry is now, and will continue to be in the years ahead, a very uncomfortable place for the man who has got himself and his business into a rut.

So also of any other business.

See what happened to the railroads when they skimped on plant renewals for a few years.

The leading units of the steel industry spend vast sums in plant and equipment renewal; and as a result boast that they can compete with the world.

There isn't a manufacturer building automobiles with his equipment of five years ago.

In spite of the age of the textile industry, progress in its machinery has been rapid during the past quarter century. During this time the industry has spent less in scrapping old and installing new machinery, size of investment considered, than any other large industry.

When should a textile manufacturer scrap his old machinery and buy new?

For a concrete example, let's talk about looms?

If your looms do not produce as much cloth, do not produce as good cloth and do not produce it as cheaply as the looms of your competitor, your profits and your prosperity are in danger.

You know what your looms are doing. You can find out what new looms will do.

When you have done this, you may find that a few new attachments will bring your looms up to date.

If you find new attachments would still leave you handicapped, don't patch, but change.

The age of your looms, be they one year old, five or thirty-five, has little to do with the question of renewal today. They do not wear out physically until long after they have become dead weight economically.

Keeping your mill equipped for economical production is the only reason for scrapping and renewing machinery.

The urge to buy a new automobile is incited and fostered by the appeal to the eye of something that looks different and new.

Automatic looms look very much alike whatever the vintage, except for a few early models. It is a basic rule in our shop that new parts and new devices must be standardized to machines now in use. We would destroy as little of the old machine as possible.

New looms look very much like older ones. A newly equipped weave room looks very much like an old one.

The urge to buy is not fostered by style appeal or beauty of lines.

Keeping machinery modern is an economic problem with no side appeals or seasonable incitements. It is likely to be neglected by those without a fixed purpose to appropriate annually for equipment maintenance.

The problem of knowing when to scrap and replace is settled by answering a very simple question:

Is your machinery affecting your profits?

If your weavers cannot run as many looms as any of your competitors on a similar weave, it is.

The refinements of the modern Northrop loom make it possible to run more looms per weaver than with the loom sold a few years ago; to make better cloth; to keep down the cost of repairs and supplies; to increase the number of looms per fixer.

These refinements mean as much to the industry in reducing costs as the original invention.

They are the result of practical application of the original invention through years of experience on nearly 500,000 looms and study by our research department of problems presented by the mills operating these looms and the great variety of weaves produced on them.

They are the result as well of developments in all other industries that could be made of advantage to the textile manufacturer.

THE MODERN LOOM

The modern Northrop loom is finished by machinery, not with a file by the try and fit method.

All boxes and bearings for shafts are made fast to the frame by ways that prevent loosening up.

It will take yarn beams up to 22″ in diameter, and in special models even larger.

It has a yarn beam bearing that can be lubricated, that is adjustable to wear and to prevent jumping.

It is built to eliminate rocker shaft wear.

It is equipped with devices to indicate at once to the weaver why the loom has stopped.

It stops with the shuttle and all other parts so placed that it can be started with a minimum of effort.

It has a battery that reduces the chances of filling breaks during transfer.

Its boxes reduce shuttle wear.

It has a modern shuttle with an opening from 1″ to 2 1/16″ to suit the weave.

It should have the Midget Feeler, of which we have already sold thousands for looms with older types.

Its new thread cutter will prevent filling being drawn back into the cloth after a bobbin change.

For medium and heavy weight goods, it provides for allowing a long stretch of yarn. In some cases this is done by a new combination of two old devices, drag rolls and Roper let-off, that take out the bump and produce a cover superior to anything heretofore seen.

If it has individual motor drive, it has a real aid to good weaving.

These are a few recent improvements of the modern loom that do not materially change its appearance but do make a difference in results.

They do not make new models; are not spectacular; do not incite the urge to buy in the man who casually "looks 'em over."

But they explain why some manufacturers with modern looms get results others say are impossible.

COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 276. MAY, 1927.

WHIPPED-IN FILLING ENDS NO LONGER NECESSARY

The Midget Feeler put an end to feeler troubles. It is simple in construction, effective in operation.

Every automatic loom that has a feeler must have a thread cutter.

An attendant evil of thread cutter operation has been the chance that cut or ejected filling ends might be whipped into the cloth.

To cure this attendant evil many special devices have been tried with indifferent success.

Our new Stafford Thread Cutter entirely removes all danger of double picks from whipped-in ends. It also meets all demands of a modern thread cutter.

Experience has taught us these requisites for an ideal loom thread cutter:

It should not cut the thread unless a transfer of bobbins has actually taken place.

It should grip the cut filling end hanging from the selvage and hold it firmly until severed by the Temple thread cutter. It should then deposit this loose piece

outside the loom, away from any chance of being whipped back into the cloth.

It should cut the thread near the shuttle eye so that a long trailing end will not hang in the eye and be carried into the cloth.

In short, at every feeler change it should cut and remove waste filling without chance of double picks.

HOW IT OPERATES

The Stafford Thread Cutter is placed on the loom under the Battery, not between the loomside and cloth.

It is fastened to the Transferrer Stud and moves into operating position only when the Latch Finger is raised to cause a bobbin transfer.

The knife is operated by the Transferrer Fork when actually making the bobbin transfer. It never cuts the filling unless a transfer is completed.

There is no chance for mispicks from cut filling.

It grips the cut filling end still connected with the selvage and lifts it out of the shuttle box, away from any contact with the shuttle.

This eliminates the first chance of a loose filling end being drawn back into the cloth.

The firm grip of the cutter upon this filling end is retained until after operation of the Temple thread cutter has severed the filling at the selvage. The loose piece then falls outside the loom, hanging from the thread cutter above the bobbin can, into which the waste end falls when the thread cutter is opened for the next operation.

This eliminates the second chance of a loose end being whipped into the cloth.

It cuts the filling near the eye of the shuttle. This leaves a filling end so short that it is easily drawn out of the eye by the ejected bobbin.

This prevents the shuttle from drawing a trailing end into the cloth and eliminates the third chance for a defect in the cloth from whipped-in filling waste.

These three chances for whipped-in filling waste cover the ordinary range of such mishaps. That a new device insures their elimination should be good news.

THE ONE HELPS THE OTHER

The Midget Feeler outclassed all previous devices in its field. Hundreds of mills applied it to their looms to make better cloth at reduced cost.

A good thread cutter is just as essential as a good feeler. They work together—the feeler to keep filling waste at a minimum; the cutter to prevent defects in the weave when the feeler renews the filling.

The new Stafford Thread Cutter is the companion piece of the Midget Feeler.

Though "new", it has been fully tried out in many mills under regular conditions. Like most new devices brought out for the Northrop loom, we have been at work on its development for years. It is the result of experience. It was designed to cure defects of older thread cutters as these defects appeared; to meet the most exacting needs of modern automatic weaving.

It is simpler in construction and more direct in action than previous thread cutters. It is less liable to get out of order, is more accessible for any needed adjustment and requires less attention from the fixer.

Applied to your looms it will mean better cloth by eliminating whipped-in filling ends and mispicks.

Better cloth, automatically made by the loom, with little help from the weaver, has been the constant aim of Northrop loom development. The Stafford Thread Cutter is another perfected mechanism to that end.

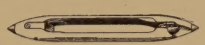
DRAPER BOBBINS FOR DRAPER SHUTTLES
DRAPER SHUTTLES FOR DRAPER BOBBINS

You cannot get good service from your bobbins and shuttles on Northrop looms unless they fit each other.

Minute differences in spacing of rings on bobbins and slots in shuttle springs mean serious troubles in automatic loom weaving. If bobbins are not held firmly nor at the right angle, weaving conditions are bad.

To insure the fit of these important loom supplies, both bobbins and shuttles should be made to a single standard—the standard established by the builders of the Northrop looms in which they are to be used.

We can guard you against little inaccuracies that may cause you weaving troubles for years before the real cause is discovered. We can do this because we know the shuttle needs of your looms, the whys of the dimensions and standards of your bobbins and shuttles, and what those dimensions and standards are.



When business is on the upgrade after a depression, it is difficult to give satisfactory deliveries on bobbin and shuttle orders. When the wheels begin to turn, neglected stocks of supplies must be replenished. Orders pour in—with urgent request for rush delivery.

Except on a few standard shuttle numbers, bobbins and shuttles are not sold from stock. They are made on order. This takes time—and, when the orders are heavy, often too much time to please our customers.

But there is a way out in our monthly order plan. It ends all worry on bobbin and shuttle deliveries.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 277. JULY, 1927.

IMPROVE YOUR LOOMS AT COST OF REPAIRS

You spend money for loom repairs.

You can so spend it as gradually to improve your looms by adding up-to-date parts as they are developed.

If you order repair parts for your Northrop looms from a local foundry, you can get at the best only a reproduction of what you have.

If you buy repair parts from the builders of the Northrop loom, you may get parts that are better than those you now have—parts that mean less repairs in future or a better running loom.

We are improving the loom all the time—sometimes in material, sometimes by new design, and sometimes in methods of making the parts or in finishing them.

These improvements may affect a single piece; or several pieces of a mechanism; or an entire device.

If a single part is affected, the improvement may be given the old pattern number and go out on all orders for that number. It may be given a new number, with instructions to our order clerks that it shall replace the old

part on all repair orders. An explanation of the substitution goes out with the shipment.

An example of change in material is the substitution of drop forgings for cast iron on such parts as Bunters, Pallets, Top Holders, Thumb Nuts, etc. We are adding to these parts from time to time as experience proves that it may be done.

An example of change in design of a single piece is the Rocker Shaft Box, which has undergone many changes, first to improve the oiling and later to eliminate wear on the Rocker Shaft by use of a replaceable bushing.

Drop forged parts and single pieces where design has been changed usually bear new pattern numbers, but are sent out on orders for the older parts when the new will replace the old without changing other parts.

IMPROVED LAY ENDS

An example of change in the method of making and finishing a single piece is shown in our new Lay Ends.

Because of the slab-like form of a large part of these castings they have always had a tendency to warp in casting. Methods of polishing that seemed to give a smooth surface actually left ridges and grooves not apparent to the eye nor perceptible to the touch. The warping made the fitting of each Lay End a special job. The microscopic ridges caused excessive shuttle wear.

New methods of finishing allow the Lay Ends to fit a standard cut on the Lay, and when bolted in place they present a perfectly flat and level surface—a result never heretofore attained in the making of Lay Ends.

The new method gives a surface without miscroscopic ridges and reduces shuttle wear to a minimum.

These Lay Ends bear the same pattern numbers as the older ones and go out on all repair orders.

WORKING IN NEW DEVICES AS REPAIRS

When improvements on the loom involve the change of several pieces, substitution of the improved parts is not as simple as where single pieces come to you by our regular method of replacement. Yet there are practical ways of doing it. An improved minor mechanism or an integral part of a larger one can be easily applied at the cost of repairs when you know how.

Many of our friends will understand the method if they recall what they did in substituting our improved battery Feed Pawl or our simplified knife-closing device on the Draper-Roper thread cutter.

You ordered a dozen or two new devices complete. A few of these were applied to the looms, and all parts taken off that were still usable were kept for repairs on looms still equipped with older devices. No more of the older parts were ordered for repairs. When the stock of any one of them was used up, more new devices were applied, and the supply of repair parts for the older devices replenished from the parts removed.

In time you had all your looms equipped with the later devices. It had cost you nothing but the regular cost of repairs.

You were able to do this because you had talked over your repair problems with one of our service men.

A NEW YARN BEAM BEARING

There are many devices you can obtain in this way at the cost of regular repairs. They will improve your looms without any extra cost to you. What these may be will depend upon the age and model of your looms. Any of our representatives can help you.

One of the latest devices that may be obtained in this way is a new Yarn Beam Bearing.

Its bearing surface is finished. It can be oiled. It holds the beam on the large part of the gudgeon. It is adjustable to take up wear. It prevents jumping of the yarn beam—a serious matter when the beam gear gets out of mesh with the Roper let-off pinion.

On larger mechanisms where new design makes radical changes, it is not so easy to make improvements at the cost of repairs. Even here the matter is worth taking up. Conditions in your mill may make it possible.

KEEPING MACHINERY UP TO DATE

Machinery must be kept up-to-date. This was never so true as today. It will be increasingly so tomorrow. A large percentage of earnings must be spent each year to put machinery in condition to earn profits in the year ahead.

All successful industrial enterprises are working on that plan. The textile industry cannot ignore what they see going on in the steel industry, the automobile industry, in every industry that is thriving and keeps its foundations solid.

New machinery costs money. Keeping good machinery of today equal to next year's competition costs money.

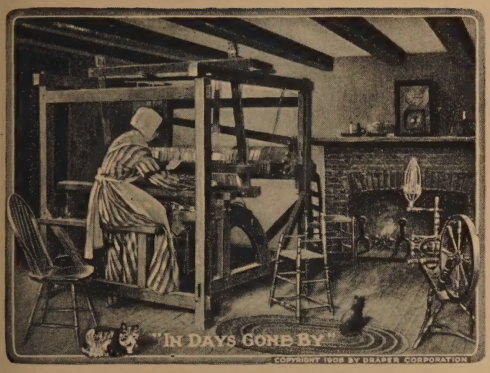
If part of this cost can be absorbed by necessary every-day repair expense, why not adopt the method?

You can't afford to buy poor loom repairs:

Partly—because your looms will deteriorate if you do;

Principally—because you have a chance through proper repairs to improve your looms from day to day;

To do it without capital charge on money you now spend for a necessary running expense.



COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 278. AUGUST, 1927.

DIRECTIONS FOR OILING YOUR NORTHROP LOOMS

We have had many calls for a chart or directions for oiling Northrop looms.

"Motor car builders give us an oiling chart. Why cannot you tell us when and where to oil our looms?"

It is not easy to make rules for oiling looms to fit the varying conditions under which they are run.

New looms must be kept liberally oiled and greased until all working parts have become glazed over. This is important, and such oiling should be done under the supervision of someone who knows what this means to the life of the loom.

Looms on coarse weaves with heavy shedding of lint, waste or starch require oiling twice as often as looms on goods where there is less lint and dirt to clog the parts and absorb the oil.

Looms with warps that run out in three weeks do not require the same oiling between times as those with warps that last three months.

The kind of oil used, width and speed of the loom, the weave—whether heavy or light—, the combination of mechanisms on the loom, the weather, the climate, these and many other conditions may affect rules for oiling.

Rules for oiling looms must be good for an entire weave room. They must provide for regular periods of oiling. Looms do different amounts of work in a day on different weaves and under varying conditions, so any general rules must be a statement of an average. They should be used only as a basis for working out a set of oiling rules for looms running under conditions and on weaves that pertain in your mill.

Much of the tradition on oiling of looms has come down from the days of the common loom and its roughly fitting bearings. Northrop looms of today, with many machined parts, finished bearings and cut gears, call for more intelligent oiling to insure the best results.

Intelligent oiling means more frequent oiling of some parts, less frequent for others. Frequent oiling does not mean more oil. It should mean less oil per application—less chance of oil stains.

GREASING CUT GEARS

New looms should be well oiled and greased until parts have the glaze necessary for long life.

This is generally understood so far as it applies to bearings, shafts and gudgeons.

It is not so generally understood that this is of the utmost importance to cut gears.

Cut gears should never be turned over on each other without first being greased. A scratch made before greasing is likely to continue to wear after greasing.

Cut gear teeth are without the slight chill and scale that protect the cast gear. A glaze of hardened, polished grease must be acquired to insure long life.

WHEN THE WARP IS CHANGED

When looms are once established in the mill, the foundation of any oiling system is the work done when the warp is changed.

The loom should be given a thorough cleaning. This should be a real cleaning with the digging out of any clogged oil holes—not a perfunctory wiping off.

Then all parts should be oiled or greased, and all excess oil should be wiped off.

The loomfixer should have charge of this work and be responsible for its being properly done. If cleaners and oilers are lax at this time, his labors are increased.

SOME DON'TS

Do not try to cut down the number of oilings by flooding with oil less frequently.

One drop of oil in its proper place is worth more than a quart where it does not belong or on the floor.

Oilers should not cut off the spouts of their oil cans that they may get a lot of oil easily.

In moving from one oil hole to another, cans should be held spouts up, not down. Oil drippings are worse than a waste of oil. They collect lint and dirt and gum up the parts so that they do not function properly.

PERIODICAL OILING

A set of oiling rules was recently made up for a mill on coarse weaves with heavy shedding of lint and waste. Such looms need the most frequent oiling. At the other extreme some looms require oiling only a half or even a third as often as the chart shows. With this understanding, we give you the chart as a guide for the making of a schedule to meet your own mill conditions.

OILING CHART FOR NORTHROP LOOMS

Made for Looms Needing Frequent Oiling—Twice or Three Times as Long between Oilings for Some Looms

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
EVERY DAY	Pick Cams & Balls Pick Shaft Bearings Crank Arms Crank Shaft Bearings Rocker Shaft Boxes	Same as Monday	Same as Monday	Same as Monday	Same as Monday	Same as Monday
EVERY 2 DAYS	Cam Shaft Bearings Aux. Shaft Boxes Harness Cams Idle Gear Stud Treadle Roll Pins Filling Cams and Followers Protector Rod Bearings Friction Pulley parts		Same as Monday		Same as Monday	
EVERY 3 DAYS		Shipper parts (if Friction Treadles Pulley) Shuttle Feeler Bushing Other Shut. Feeler parts Oscillator Cam Follower Other Knock Off parts T.U. Roll Bearings Transferrer			Same as Tuesday	
ONCE A WEEK				Loose Pulley & Shipper Parts Lay Guide Fork Slides Start. Rod Bearings Take Up parts Spring Shaft parts Let Off parts with Beam & Whip Roll Bearings Harness Roll Bearings Lacey Top W.S.M. parts (upper) Parallel Stud & Spring Bobbin Disc & Pawls Bobbin Support		
GREASE Once a Week			All Cut Gears Parallel Tongue Temple Thread Cutter Temple Bar Cutter Spring & Stud Shut. Feeler Cam path			

Occasionally

Drop of Oil on Filling Motion Shipper Bushing.
L. O. Internal Gear and Pinion and path of nub of Controlling Lever Link—Grease, but do not get any on Friction Leathers.
Wooden Harness Sheaves—Clean when warp is out and put grease on studs and between Sheaves.

COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 279. SEPTEMBER, 1927.

68,864 MIDGET FEELERS SOLD IN FIFTEEN MONTHS

Over 68,000 Midget Feelers have been sold on new looms or to replace other Feelers on old looms.

The total on new looms is 18,106.

Total number ordered for replacement is 50,758.

In May, 1926, we confidently stated in Cotton Chats "The Feeler problem is solved."

That bold statement was based on results of mill experience with Midget Feelers put out up to that time.

A large number of orders for small lots of Feelers for test followed.

The repeat orders and total number since sold prove that claims for the Midget Feeler were not overdrawn.

The total sales are probably the largest for any new loom device in an equal length of time.

The Midget Feeler is a necessary part of the loom equipment of all mills weaving cloth where quality of product is essential. It insures better cloth. It reduces seconds. It limits filling waste to a minimum.

Draper Corporation Soccer Football Team

HOPEDALE PLAYERS IN INTERNATIONAL SOCCER

On Saturday, September 24, Hopedale will see one of the five international soccer contests on the schedule of the American visit of the Worcestershire, England, football team to Worcester County, Massachusetts. It will be the second game of the American series, and the Draper Corporation soccer team will be the New England opponents of the players from Old England.

The English visitors will arrive in Hopedale early on the day of the game and during the forenoon will be shown over the Draper plant and the town. They will be the guests of Mr. B. H. Bristow Draper at lunch at the Magomiscock Golf club. The game will be played in the afternoon on Hopedale town park, and in the evening the Draper Corporation Football Association will give a banquet to the visitors in Hopedale Community House. Holman of Norwood will cater.

Attractive souvenirs of the visit to Hopedale will be presented to each member of the English party.

The visit of the English players is the result of the trip to England one year ago of a Worcester County soccer team selected from the county industrial league. That trip was planned and financed by Worcester County Sportsmanship Brotherhood, Inc., organized to promote the playing of soccer football and increase the feeling of brotherhood between all English-speaking peoples. All the games on that trip were played with teams in Worcestershire.

The present return trip is sponsored in like manner by the Worcestershire Sports Fellowship.

Besides the game in Hopedale, Draper team players will participate in two other contests.

The third American game will be played Tuesday, the 27th, in Worcester with a picked team from the county industrial league as opponents. The big game of the series comes two days later on Governors' day at the New England Fair, when the Englishmen meet the All Stars, picked from all clubs in the county.

Seven players from the Draper Corporation team are on the squad of 25 from which the Picked Team and All Stars will be selected. Six of the 14 who made the trip to England last year were Draper players.

FEELER WASTE NOT GUESSWORK

Setting a Midget Feeler to get the least possible filling waste is not a matter of guesswork.

First you determine the smallest amount of yarn you must have left on the bobbin to prevent a run-out.

Nothing will prevent a maximum variation in waste on ejected bobbins of two picks.

Another pick, or at the most two more picks, will be ample protection.

With the Burdett Bunch Builder on your frames you can provide for a bunch of exactly this amount of yarn.

The Midget Feeler slides on the uncovered barrel of the bobbin.

Printed directions for setting to insure accurate operation are furnished to all who have the Feeler. The setting is easy. Once set, there is little need of further attention.

With the Burdett Bunch Builder and a properly set Midget Feeler, filling waste should always be less than the amount of yarn you have put in the bunch.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 280. OCTOBER, 1927.

A FEW SIDELIGHTS ON OILING CHART FOR LOOMS

Our August Cotton Chats upon oiling Northrop looms appears to have treated a very timely subject.

One textile association made it the subject of a conference discussion.

Several textile papers quoted the article entire. Many calls have come for extra copies for distribution to loomfixers. The chart has been posted as a guide in weave rooms.

This is pleasing to us with this exception—the chart is being accepted in some places without noting the line at the top and explanation in the text that it was made for looms requiring most frequent oilings.

Perhaps we did not make this clear.

The average loom needs to be oiled about half as often as the chart states. Some looms, running under very favorable weaving conditions, may need oil even less frequently than this.

The chart was made as a guide to help you make one for yourselves. We could not make a chart to cover all

conditions. We made it for looms needing most frequent oiling so that it would be easier for you to modify it to your needs. Had we tried to strike an average for all looms, it would have fitted none, and you might have had to experiment with both more frequent and less frequent oiling.

You may be sure your looms will not need oiling more frequently than the chart states.

You may depend upon the relative frequency of the oilings. Knowing what one set of parts require, the other oiling periods will be in proportion.

Following the chart literally will do no harm if too much oil is not used. It may make a little more work than is necessary on some looms.

LENGTH OF WARP RUNS

We have a letter from the general superintendent of a mill with several plants that may help others in solving their oiling problems. He writes:

> We have noted with interest your Cotton Chats No. 278 on loom oiling. The suggested oilings will naturally vary considerably on the styles of cloth woven, and as we have such a wide range, we would appreciate very much if you will be kind enough to let us have your suggestions for oiling looms in which the warps run out weekly, fortnightly, monthly and bi-monthly.

This superintendent has several thousand looms in different plants. They are of many models, have the varying design of looms installed over a period of 25 years, operate on a greater variety of weaves than any other Northrop looms we know of under one management, vary in warp runs as indicated and differ in the amount and character of lint waste made.

Looms of these greatly varying conditions may be operating side by side in the same weave room.

The superintendent understands all this. He knows that any rules we can make up can be only a guide to be modified—perhaps for each weave room. He notes some of the reasons why.

How would the regular oiling schedule be affected by length of warp runs, assuming that there is a general cleaning and oiling of the looms when the warp is out?

In one way only.

If the warp runs out in a week, omit from the chart all parts that are oiled not oftener than once a week. More frequent oilings should not be omitted or changed.

Oiling done when the warp is out, no matter what the length of run, only takes the place in the schedule of one oiling for all parts. No more oil should be put in any bearing then than at any regular oiling. There is no provision for holding a reserve of oil.

THE OILING EQUIPMENT

The price at which looms are sold does not allow equipping them with devices for holding a supply of oil and regulating its flow to the working parts—even if such a device were desirable or practical.

Oilholes and open bearings make up the loom oiling equipment. They will hold only a limited amount of oil.

Oil that works out of the bearings, oil carelessly spilled where it does not belong gathers lint and dirt, gums up working parts, increases the work of cleaning the loom and may cause serious loss from oil spots on the cloth.

To guard against oil spots, only as much oil should be supplied to a bearing as that bearing will hold.

The amount of oil one bearing will hold, the time this oil will properly lubricate its working parts is different from the requirements of some other bearing.

This was one reason for making up the chart. The variations in the intervals between needed oiling for different parts were not properly taken care of in the traditional oiling customs handed down from the days of the common loom. Those traditions called for infrequent oilings due to a fear of oil spots on the cloth. The smaller number of working parts needing oil made that system possible and minimized the damage from neglect.

The modern Northrop loom has many parts that need oil. They must continue to work in harmony and without excessive wear to give the best results.

Oiling must be standardized to meet the needs of the machine. It must be discriminating to prevent damage from oil spots.

We made the chart as a suggestion to more thought upon the oiling of looms; as a hint that traditional methods had been outgrown.

Its ready acceptance proves there was need for it.

But don't miss the point.

The same rules cannot be made to cover looms built many years ago with rough parts and loose bearings and looms recently installed that have carefully machined parts and close fitting bearings.

Age of the looms, style of construction, range of styles woven, duration of warp runs, the amount of lint made, all affect and modify rules for oiling.

KIND OF OIL

So far we have said nothing about the kind of oil to be used and its effect upon the frequency of oiling.

What the oil shall be is a question that you must decide; but the oil you select may make a difference in the length of oiling periods you will find it necessary to set up in your chart.

COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 281. NOVEMBER 1927.

AIDS TO WEAVING RAYON ON NORTHROP LOOMS

How to weave rayon is one of the very interesting and pressing problems of the cotton textile industry.

Rayon has the silky sheen my lady demands in all her garments and many fabrics she puts to other uses.

It offers the cotton mill a chance to save business that would otherwise go to the silk manufacturer.

From the designer's standpoint, rayon is a success. It can be used effectively to enhance the beauty of a great variety of fabrics.

It has given real impetus to originality in cloth designing. There is less copying of foreign fabrics and more new creations in American textiles.

But designing rayon fabrics or fabrics made from a combination of rayon and another fiber is easier than producing the cloth the textile artist has designed.

Rayon is different from any fiber the weaver has ever used before. How to weave it successfully is a problem not yet fully solved; but great progress has been made in the short time the fiber has been used.

SPECIAL LOOM NOT NECESSARY

A special rayon loom is not necessary. The Northrop loom has been adapted to hundreds of weaves by gradual modification through the adoption of devices experience has proved most effective.

The same course has been followed with rayon. We are now in position to make recommendations with the authority of hundreds of successful experiments behind them. These recommendations apply both to ordering new looms and changing over old ones to weave rayon.

DOUBLE FILLING FORK

A double filling fork is desirable. Much of the rayon used breaks more frequently than other yarns. A single or double half pick makes a worse defect in rayon than in cotton cloth. The double fork prevents many mispicks that occur when only a single fork is used on yarn that breaks too frequently.

PREVENTING CRACKS IN THE CLOTH

We recommend the No. 17 Warp Stop Motion for rayon weaving. Its knock-off device delays the action of the brake until the pick has been driven in and the shuttle is in the left hand box, both movements completed with the loom running at full speed. The brake is powerful enough to stop the loom at once when applied.

This prevents cracks in the cloth that come from a pick poorly laid due to the gradual slowing down of the loom with earlier devices. It also sets the check strap for starting and reduces the work of the weaver.

The Roper let-off weaves more even cloth than the Friction let-off. Cut gears in the let-off are a help.

In take-ups we find those with the Nutting device give better results than take-ups without this top bar. Cut gears and ground take-up roll are an advantage.

The Midget Feeler is desirable. The new Stafford thread cutter that cuts the thread at the eye of the shuttle is essential.

BATTERY, BOBBIN AND SHUTTLE

The battery, bobbin and shuttle should be special.

The battery should have our anti-sloughing device—a tape tension that prevents the rayon filling from loosening up on the bobbin in the battery.

The bobbin should not be too small in diameter. A bobbin has been devoloped for silk and rayon with a barrel slightly larger than for cotton and one size shorter than the usual bobbin for a given shuttle. A 6-3/4″ bobbin in a 7-3/8″ shuttle seems to be the favorite.

Bobbins should not be enamelled or have any other hard finish. Properly shellaced bobbins are giving the best results.

The shuttle should be lined to control the weaving off of the yarn. Muskrat fur with the grain against the yarn has given good results.

SPECIAL TEMPLE ROLLS

Special temple rolls are required. Rolls of the regular type with teeth projecting only five or ten thousandths of an inch are good for some weaves. Plush rolls have been used.

We generally recommend rubber rolls. They may be easily made from regular rolls by grinding off the teeth and covering the wood with soft rubber tubing such as may be obtained in the local drug store.

KEEP RAYON DRY

Rayon weaving should be done in a room with less humidity than is usual for cotton weaving. For this reason, rayon weaving should be segregated.

Rayon should be kept as dry as possible up to the time it is taken into the weave room.

A TRICK FOR THE WINDER

Knots are especially troublesome in rayon filling. Use weaver's instead of spooler knots. The operative, when piecing up in winding, should throw the knot back upon the outside of the yarn package. If left on the cone, it will cause a shiner when the layers of yarn over it catch in weaving off.

SHINERS

"Shiners" are rayon's greatest problem.

Shiners are sometimes caused by variations in the diameter of the rayon.

They are usually caused by a change of diameter or shape of the yarn due to stretching. Good yarn should have enough elasticity to resist the ordinary strains of weaving. Rayon does not have the elasticity of other yarns and every time it is stretched a shiner appears in the cloth.

Rayon is an attempt to duplicate by chemical and mechanical processes the fiber spun by the silkworm.

In luster of the yarn, the processes are a success. In elasticity and strength, the product of the silkworm has not been equalled.

Until the chemists find a way to secure elasticity, weavers and those who handle rayon in its preparatory processes must do their best to prevent the uneven strains that cause the shiners.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 282. DECEMBER 1927.

OUR NEW BOBBIN PLANT IS DAMAGED BY FLOODS

Floods that devastated a large part of three New England states on November 4 seriously damaged our new bobbin plant at Beebe River in the town of Campton, N. H.

Designed and erected during the past two years to give us better and larger bobbin-making facilities, the plant had just come into full operation. We thought we saw an end to the handicaps and delays to our business incident to moving producing machines from Hopedale and starting them up under new conditions. But the flood postponed realization of our hopes.

The new bobbin plant is located on the banks of the Pemigewasset, supposedly above flood damage from spring freshets. In the rear flows the Beebe River, a small stream from the nearby mountains. These two rivers, suddenly swelled by the two-day rainfall of from six to nine inches, became raging torrents, carried away two bridges on the branch railroad that serves our plant and turned the whole valley into a lake.

Our main Finishing mill is of brick, three stories high with 64,500 square feet of floor area. The water flooded

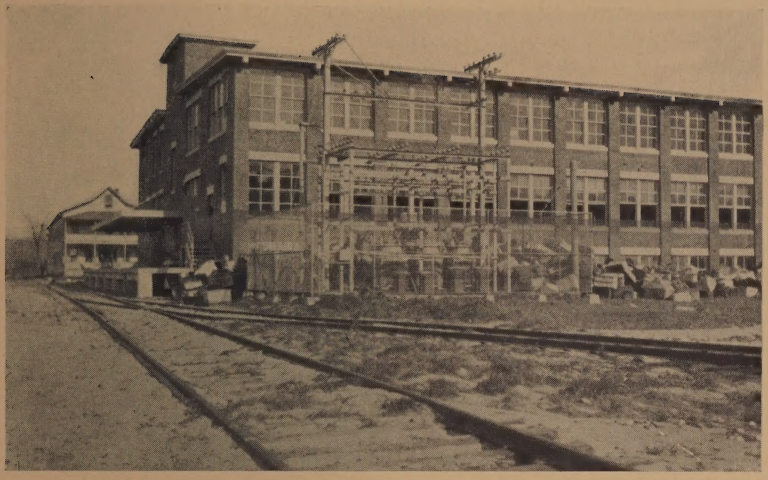
the entire first story and rose two feet above the second floor. Our Roughing mill and Dry Storage house, in fact all of our sixty manufacturing, storage and subsiduary buildings, including tenement houses, were partly under water, which stood six feet deep on the floor of the main office building.

River silt covered everything the waters touched. All electrical apparatus, including our high tension transformers, was completely submerged. These and our drilling and turning machines could be used only after a tremendous amount of labor in drying and cleaning.

Some of the Bobbins in Process That Were Thrown Away

Restoration was pushed with all possible speed, and by Sunday night, November 6, we had lighting facilities for the village and steam heat in the plant.

Fortunately our stock in storage, being on elevated floors, was not damaged except from moisture from water in the lower floors. This was overcome when heating



Main Bobbin Finishing Shop
Shaded Lower Part Shows Height of Water

conditions were restored. But all stock in process in the Finishing mill was ruined. This had to be removed and a new start made with fresh, dry stock. The plant went into full operation again on November 28.

Meanwhile the Boston & Maine railroad had lost 950 miles of trackage, including 15 miles and two bridges on the branch to our bobbin factory. In spite of the road's heroic efforts to restore service and our use of trucks over washed-out roads to a station seven miles away, shipments have been badly interfered with.

The loss to us in damaged property, in stock and stock in process, in loss of production and in cost of cleaning up and resuming operation has been very large, without reimbursement of any kind. We were fortunate that no lives were lost, that we could restore working and living conditions as soon as we did. Our employes suffered heavily in loss of household effects, for the first floor of every dwelling was flooded to a depth of about six feet. No buildings were washed away except a few small garages. One of our main 21 car garages was moved from its foundation and seriously damaged. One side wall of

the Recreation hall was crushed in and the contents of the building wrecked.

Because we had a limited stock of finished bobbins stored beyond reach of the waters, we were able to make about 50% of our scheduled November shipments. Though transportation facilities are not fully restored, our plant is again in normal operation.

This disaster has further complicated the problem of reducing our unfilled bobbin orders, which outran our best efforts during the period of starting up the new plant. We deeply appreciate the spirit of co-operation and good will shown by our customers and promise you every possible effort on our part to meet the immediate needs of those who have waited and gradually to reduce unfilled orders to a normal status.

Our picture of the washout on the Grafton & Upton railroad three miles from our main plant in Hopedale shows that even at home we did not entirely escape the effects of the storm. Over this line we ship a train load of machinery every day, but were able to ship regularly through the Milford end of the line while the washout was being repaired.

Washout on G. & U. Railroad Three Miles from Hopedale

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 283. JANUARY, 1928.

WOULD YOU PUT BACK TROUBLES WE TOOK OUT OF YOUR NORTHROP LOOMS

The textile situation has forced many mills lately to make changes in their product to secure a line of goods that gives promise of profitable operation.

In making necessary changes on their looms, some of them have found a new reason for the exclusive use of Draper repair parts on Northrop looms.

Northrop looms are built on order to take care of the range of weaves specified by the mill in the order. They are designed and standardized to handle scores of other weaves for which we have standard parts.

When the mill wishes to enlarge or change its line by a weave for which its looms are not equipped, it is necessary only to state the facts to us. Our records of the parts sent on the looms and those subsequently applied by us tell us what parts are needed.

When the parts reach the mill they fit the looms. Application may be easily and speedily made with the least

possible disturbance and delay. Lost production from the change is kept to the minimum.

This is a feature of Draper service for which we maintain a very elaborate set of records; and for the proper working of which we insist upon standardization of all new design to match up with the old.

When the Service Fails

But there is a time when this service fails in spite of our best efforts.

It is when continued use of repair parts not made by us has put looms in a condition where standard parts will not operate without expensive filing and fitting.

We have had many recent examples.

A mill wants to start on a large order calling for a weave for which their looms are not equipped. They place an order with us for the requisite parts.

The order is "rush," and the parts are shipped by express at considerable expense.

Word comes that the parts do not fit. A service man is hurried to the mill to straighten things out.

He finds that for many years they have been using ill-fitting home-made castings for loom repairs; that they made a previous change of weave with castings made locally of which we have no record and with which our standard parts cannot be used.

We do everything possible, but before their looms can be started on the order the delay has embarrassed the mill, and the cost of every yard of the new cloth has been materially increased over what they figured on when the order was taken.

And besides the excessive cost of the change-over, they discover they have been getting an inferior, and therefore costly, production from these looms for years, due to the use of "cheap" repair parts.

Cheap Repair Parts are Not Cheap

It is easy to prove that "cheap" repair parts are not cheap on the automatic loom.

We have done it for scores of mills by following the facts through their own plants—showing the loss in defective castings, in larger cost of fixing, in lost production while fitting a casting not quite right.

But just now we want to emphasize another phase of an uneconomical search for something that is cheaper.

Every year's improvement of the mechanisms of the Northrop loom and in methods of building and finishing its parts makes it more and more desirable to use only accurately made and finished parts on repairs.

The common loom was little more than a frame to hold the warp and throw the shuttle. Quality of the cloth depended upon the careful supervision and skill of the weaver. The nature of the repairs to such a machine was not so important.

In early days of the Northrop loom, when we were intent upon invention of new devices to make it fully automatic and had not come to realize the necessity of accuracy of construction of the loom as a whole, many a mill persisted in making their own repairs as they had for the common loom.

It was an expensive policy then, though it took years of experience to bring it home to some of them.

Substitute repair parts can be used to-day only with permanent injury to your looms; with a gradual lowering of both quantity and quality of the product.

We wish we could give you all the details of the experience, cumulative through years, that has brought us to this conclusion.

It compelled us to build a better loom; showed us where accuracy to minute dimensions is essential.

It forced us to consider methods of construction and finishing that appeared too expensive for machines sold at the price of a loom—a necessity solved only by the invention of easier and cheaper methods of attaining the same niceties of construction.

Let us illustrate by a concrete example.

For many years users of Northrop looms had trouble with thick and thin places in their cloth. We designed one device after another to regulate a let-back of the take-up when one or more picks were out. There was no solution until we began to build take-up and let-back parts with an accuracy never before attempted. There is now little trouble from thick and thin places on a modern Northrop loom.

Would You Put Back Troubles We Took Out?

In short we have been taking your troubles out of the loom for years.

If you use repair parts made locally or by someone who tries to duplicate our parts, you will put back into your looms the troubles we have taken out.

In a few years you will have looms no better than those built before we inaugurated the standardization of parts and improved methods of manufacture.

Can you afford to bring this about?

If you buy Northrop loom repairs from us, you get in regular course substitution of many new and improved parts—thus improving your looms from year to year.

Your looms are also in condition to take, without expensive fitting, any new devices you may care to buy or any standard parts for a new weave.

To get the full worth of Northrop looms you cannot afford to use any repair parts except those made under the same conditions as those on the looms you bought.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 284. FEBRUARY, 1928.

SOME INSIDE FACTS ON MAKING REPAIR PARTS FOR NORTHROP LOOMS

"You say I can't make repair parts for my Northrop looms as good as those you make at Hopedale. Why not?

"Can't I hire pattern-makers just as good as yours? We have a good foundry in this city. My shop has the necessary machines for properly finishing our castings. I can make jigs for drilling them."

Thus spoke, several years ago, the master mechanic of a large New England cotton mill. He is not now with the textile industry, and the mill is not active. What he said, however, and the reply made by a Draper man is pertinent and of interest to those responsible for the operation or fixing of Northrop looms.

"But," replied the Draper man, "you do not have the proper starting point for making jigs. You are without the original drawings as a guide to the really vital dimensions; without our experience in making standard parts for the half million looms we have built."

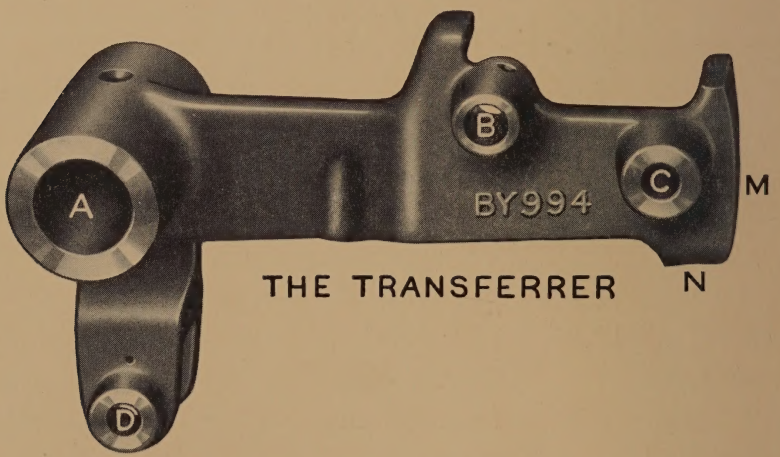
"Well, your castings are made from those original drawings, aren't they? Haven't you put your experience into them when we get them?"

"You are correct in your assumption."

"Then why can't we duplicate them—this Transferrer, for instance? What special trick is there in finishing this piece?" He picked up By 994.

"How would you drill the three holes A, B and C?"

"Why, that's easy. I would make a jig with three drills carefully set by one of your 'accurately made' pieces. Wouldn't that duplicate your drilling?"



THE TRANSFERRER

"Which hole would you locate and how?"

"I would put the hole A in the center of the hub, where it belongs, and fix a stop in my jig so that hole B would be the same distance as yours from one side or the other. Here is one made that way. Notice that the holes A, B and C in my casting tie up with yours." He proved it by running three rods of proper diameter simultaneously through the three holes in the two castings, his and ours.

"But we don't start with the hub. Castings never are quite accurate because things must be approximated in molding, especially the amount of shrink.

"The vitally important parts of that casting are the curved end M, which must clear the Back Box Plate during a transfer of the bobbin—and the clearance is very small; and the curved surface N that must fit the bobbin butt if a clean transfer is to be made.

"As we finish the Transferrer, our first jig gauges the hole A from these two important surfaces. Because of the slight inequalities of all castings, the hole almost never comes in the center of the hub. If it is enough off center to weaken the casting, the piece is thrown away. After drilling and reaming the hole A with this jig, the surface M will always clear the Back Box Plate, and the surface N will engage the bobbin butt properly for a good transfer.

"Our second jig holds the casting on a stud that fits the hole A and with the surface N against a stop. Holes B and C are drilled by guides in this jig. The guides are removable to allow reaming with the casting still held in the jig.

"The hole D is drilled from a spot in the casting. Perfect accuracy is not essential here because of the adjustment allowed in the Latch Finger and Stand.

"We haven't always done it this way. Only long experience and some failures taught us how to jig this and other parts so they would always fit looms in the mill. Let's try the two Transferrers on your looms."

In the weave room, a fixer was given both castings to try out on a loom. The Transferrer they made did not clear the Back Box Plate. When filed and fitted to clear, it engaged the bobbin so that it would throw it out of the proper line of transfer.

The average fixer, given such a casting, would do his best to fit it and let it go. He might not know that it was liable to cause smashes and other troubles incident to an imperfect transfer of the bobbin.

The Draper Transferrer fitted exactly and made a proper transfer of the bobbin.

"You see," said the Draper man, "that your jig did not duplicate our casting. You picked the Transferrer. Had you selected any other part requiring jigging, we could have given you an equalling interesting story.

"Our Northrop loom castings may appear to be easy to duplicate. They look like rough castings. Yet, in certain essential ways, they must be as precise and exact as the parts of a watch or an expensive machine tool. The loom must run like a watch if you would get the full benefit of its automatic features.

"But the price at which it must be sold prevents building it with castings with any expensive finish not absolutely necessary.

"To enable us to build from rough castings machines with the precision of operation requisite in a Northrop loom has required indefatigable research for the things that are essential. No one else knows these essentials, which may be a trick in molding, a rule for jigging or merely a test or method of inspection.

"When you started to jig your Transferrer, you did not know the two vital things on which the jigging of that piece must depend. They are on our drawings and in our instructions for jigs, where we set down every new idea in making or finishing that experience teaches us is necessary or desirable.

"You may have better pattern-makers and jig-makers than we have; but without our records of research and experience they cannot duplicate Northrop loom parts."

We ought to be able to add that this settled it at this mill. But it didn't. The master mechanic kept on making loom parts until protests of overseers, weavers and fixers forced a change to Draper parts.

COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 285. APRIL, 1928.

CUTTING THE MAJOR COST OF MAKING LOOM REPAIRS

If you would reduce the cost of making repairs on looms—or any other producing machine in the mill,—the first essential is a well-stocked and systematically arranged supply room.

In the last two issues of Cotton Chats we tried to show why you should use only Draper-made parts on your Northrop looms; how study, experience and accumulated knowledge has enabled us to improve the loom and its parts from year to year and eliminate weaving troubles of earlier automatic looms; that substitute parts, made by those without our special knowledge, will bring back many of these old weaving troubles.

In this issue we want to talk about cost—for loom repairs cost a lot of money every year.

You say you know that very well? You keep careful account of the cost?

But do you?

You probably keep an account of the cost of parts used. Perhaps you figure them out at cost per loom.

This is well as far as it goes; but it is only part of what you should know. It is only part of the cost.

Do you know what it costs you every year in lost production while looms are stopped for repairs?

You require immediate report on looms stopped for warps. Your weaver can make that report an excuse for reduced production; but you take good care he does not have the excuse too often.

What report, if any, do you require on the length of time looms are stopped for repairs?

If you are doing a profitable business, your looms earn a certain amount every hour they run. If they are stopped when they should be running, you lose all that profit and something more on overhead.

Unless you make special effort to guard against it, your looms will be stopped for repairs many hours when they should be running.

Careful investigation over a period of years has proved that this loss is usually far greater in a year than the entire cost of repair parts used.

In other words the major cost of loom repairs is in the weave room—but not on the overseer of weaving unless he determines your policy on repairs.

The investigation also proved that this major cost of repairs is largely needless. It can be cut down.

Tackling the Problem

The first essential to a reduction is to require reports that will show what this cost is.

Studying these reports we will discover there are three chief causes for an unnecessarily long stop of the loom while repairs are being made:

The new part to replace the broken one is not on hand ready for application.

It may be on hand somewhere in the mill, but the fixer has to hunt for it.

It may have to be filed and fitted to get it on the loom or to make it operate properly.

The remedy for the first two of these losses is a well-stocked and systematically arranged supply room.

The remedy for the third is to buy repair parts exactly like those to be replaced—parts that fit when applied and allow immediate resumption of weaving.

Nearly every textile mill has a supply room.

Few have one that may be fairly described as being "well-stocked and systematically arranged."

Well-stocked does not mean over-stocked. We have seen supply rooms not well-stocked that would inventory far beyond a reasonable total for repair parts. They had too many of some parts; an under-supply of others; and none at all of parts of which there should always be a limited number on hand.

Some years ago we re-organized a supply room for a New England mill. When completed, more than ten times the number of different loom parts formerly carried were properly located in individual bins. The inventory, figured on the maximums called for, was less than the actual inventory of the old supply room.

That supply room reduced weaving costs enough so that a plant of the same corporation in another city sent a committee over to see what had been done.

Organizing and Running a Supply Room

The sole purpose of your supply room is always to have available a new part for one that breaks or wears out.

The location and equipment of the room, the number and organization of the hands employed will vary for each mill; but should be determined by the main purpose of the room.

There should be an adequate bin system with a bin for each kind of castings and supplies. Never carry castings of different patterns or two kinds of supplies in one bin.

The bins should be numbered by some regular system; and each should bear the pattern number and name of the part it contains and maximum quantity to be carried.

There should be a card index of all parts and the bins containing them that they may be located at once when needed.

These cards should carry an open ledger account and inventory of the parts, the number of machines on which the part is used and the maximum supply to be carried.

These form the basis for a re-ordering system that will insure the happy medium of a supply adequate to all ordinary demands of the mill without the burdensome inventory of an oversupply.

How to work out this ordering system for particular cases and conditions will be explained on request.

When the Order Does Not Come

Now and then the excuse made for a machine stopped for parts is that the makers of the parts did not ship promptly on the order for new castings. Sometimes this means the Draper Corporation.

Ninety per cent of our repair orders are shipped within 24 hours after being received; and the delay on most of the others is due to the special efforts we make to be sure only the right thing is shipped.

But even when orders are shipped immediately, it takes time to make up the order and get it out of your mill, more time to pass through the mails to us, and time for the shipment to reach you.

With a loom stopped all this time,—especially if this happens often,—you will lose money on the fastest service you could possibly receive.

A proper supply room prevents this loss.

Without a proper supply room you cannot reduce by very much this major cost of repairs.

COTTON CHATS
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DRAPER CORPORATION
HOPEDALE MASS.

No. 286. JUNE, 1928.

REGULATING THE STOCK IN A MILL SUPPLY ROOM

Our April Cotton Chats discussed the subject of "cutting the major cost of making loom repairs."

We pointed out that this major cost is not in the price paid for repair parts. It is in the lost production while repairs are being made.

We advocated requiring reports that will show what this cost is. These reports will demonstrate that the first requisite to a reduction of this major cost is a well-stocked and systematically arranged supply room; the second, to buy parts exactly like those to be replaced—parts that will fit when applied and allow immediate resumption of weaving.

We explained further that well-stocked does not mean over-stocked; that many an over-stocked supply room falls far short of meeting the needs of the mill.

The happy medium, a supply of repair parts adequate to all ordinary needs of the mill without a burdensome inventory from an over-supply, may be obtained only by a proper re-ordering system.

We offered to help in working out such a system of re-ordering for particular cases and conditions.

The requests for details have been too numerous to allow us to take up the subject by correspondence with each mill. Under these circumstances, as first aid in the case, we offer here a general explanation of the re-ordering system we believe a mill supply room should follow.

Fixing the Minimum

The first thing to settle in regard to a stock of anything carried in a supply room is the safe minimum. This minimum stock is to be the re-ordering point. It must be large enough to carry the machines it affects until an order then placed can be received. There must be no chance of having machines stopped for lack of such parts.

This minimum of safety depends upon two things:

The time required to obtain a new supply on order.

The rate at which the part is used.

Practically we have found a safe rule for mills to figure on in determining the question of time.

Three months will prove a margin of safety on all kinds of regular supplies. A three months stock on hand will prove a safe minimum.

What is a Three Months Supply?

This must be estimated to the best of your ability at first, if the facts are not available. If you keep such card records as we recommend, with ledger account on the cards of parts received and given out, you will soon know what is an average three months supply. As the facts appear, minimums already established that do not agree with the facts may be corrected.

One of the desirable things to know when trying to determine quantity of parts to be carried, especially on loom parts, is how many machines in the mill take that part.

This information is not always easy to get in the supply room. If, however, the record card carries a place for this information, it may be filled in when obtained.

What this information may save you is illustrated by what we found in going over the stock of a mill that had two thousand looms with brass fork grates. They had a half barrel of brass fork grates—but they were for four-tined forks and only two looms in the mill had four-tined forks. All the others had three-tined forks.

Next the Maximums

Having set the minimums, the next thing to do is to determine what the maximums shall be.

Just as the minumums are your protection against being without parts when needed, the maximums should be fixed to prevent an oversupply.

The common plan of ordering by the hundred or the hundreds and re-ordering at a minimum of ten is not based on any practical reason.

If ten is a safe minimum, twice that is a proper maximum. That is, a six months supply is ample as a maximum. And in re-ordering, let the order be for the difference between the stock on hand and the maximum—not for the full maximum quantity.

In practice this means that your stock of any given part will be between something less than a six months supply and the small stock to which your minimum has been drawn down while waiting for the new order.

This means a safe and reasonable inventory for the supply room.

Some Exceptions

There is a small class of supplies that form an exception to the above rule for maximums. These are the articles

that can be bought for a better price in quantity. If the quantity is reasonable and the saving justifies it, the maximum and ordering quantity may be fixed to take advantage of the lower price.

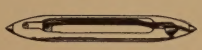
There is a large class of parts on Northrop looms that are an exception to the rules for both maximum and minimum. These are the parts where you find a three months average of parts used is less than three.

Here the maximum should be fixed at four, two or one, based on the chance of having more than one break at a time, the cost of carrying the parts and what it would cost to wait for parts if you did not have them.

Cut Down Orders and Shipments

Having protected your machinery with this system of minimums, you should have orders made out as fast as these minimums are reached; but the orders may be held and sent out once a week or every two weeks according to the size of the mill.

This means a saving in billing and transportation expense, which you are probably trying to effect now by quantity orders that keep your supply room inventory high. Grouping many small orders for different parts is better than large orders of a few parts.



A supply room exists for one purpose only—to keep the wheels of your producing machinery turning. It is your protection against lost production. The minimums established measure this protection. Proper maximums prevent an uneconomical inventory.

COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 287. JULY, 1928.

FEWER CLOTH DEFECTS FROM WHIPPED-IN AND TRAILING FILLING ENDS

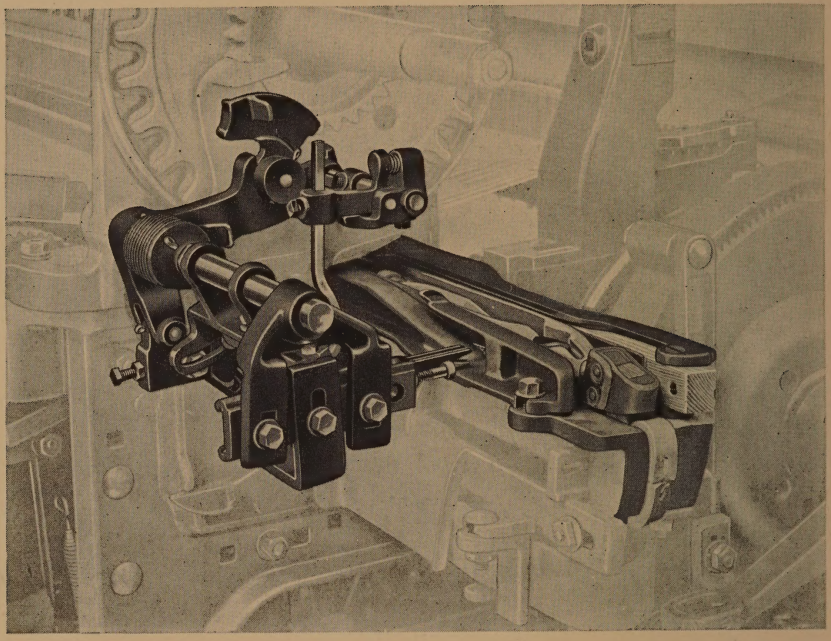
The Stafford Thread Cutter cuts the filling close to the shuttle eye. It leaves a hanging end of filling from 1 1/2" to 1 7/8" long outside the eye.

All previous Thread Cutters cut the filling beyond the selvage end of the shuttle. They left an end of filling from 12" to 15" long.

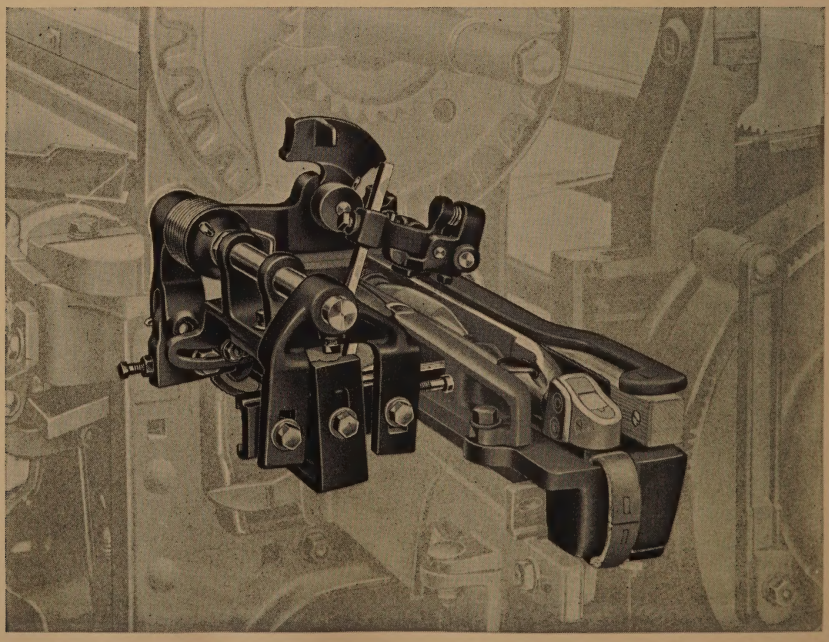
A Thread Cutter, operated by the Feeler, cuts the filling just as the bobbin is ejected by the Feeler. It does this that the ejected bobbin, as it falls in the can, may draw the discarded filling out of the eye of the shuttle.

If this discarded filling is not drawn out of the shuttle eye, it will be carried into the open shed to make a broken pick alongside the complete pick from the new bobbin—a very noticeable defect in the cloth.

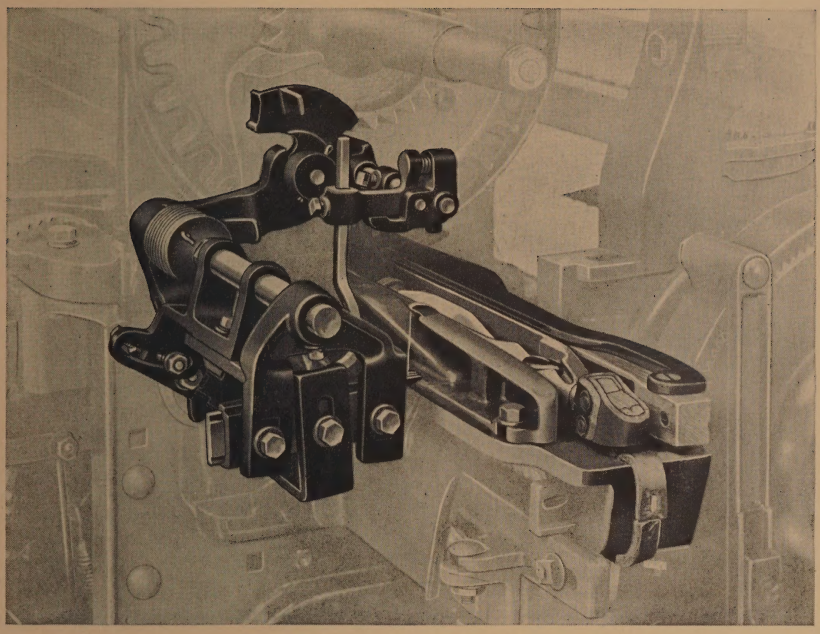
The short end left by the Stafford Thread Cutter is more easily and surely drawn out than the long end of



Moving into Position to Cut Filling



Cutting the Filling



Lifting Filling End Out of Shuttle Box

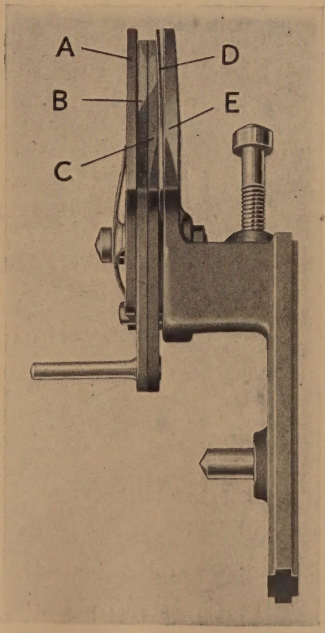
Our first picture shows the Stafford Thread Cutter moving into position to cut the filling (seen through opening in Front Box Plate).

The second shows the cutter at the time the filling is cut. The Transferrer is already on the downward stroke to transfer the bobbin. The new bobbin is not shown, leaving some details clearer.

The third shows the cutter lifting out of the shuttle box the severed end of the filling still attached to the selvage.

The fourth shows the assemble of the knife and why it cuts cleanly and holds the thread firmly.

The Upper Knife (D) is slightly curved to give a shearing cut. The combined thickness of the Lower Knife (C) and the Filling Knife Guide Fiber (B) give a long end to be held firmly between B and Filling Knife Guide (A).



Showing Assembled Cutter

other thread cutters. It cannot be trapped between shuttle and wall of the shuttle box. It does not drag and hang to the friction of the eye like the long end.

It does not require the long drop of the unhandy long bobbin box. It is not handicapped by a box full of bobbins. The thread is out when the bobbin has dropped a couple of inches.

In short, the Stafford Thread Cutter was designed to eliminate defective picks caused by trailing ends of discarded filling that hang in the eye of the shuttle.

And it does the trick.

Besides its important task of clearing the shuttle eye of discarded filling ends, the thread cutter has another important function.

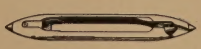
It must take care of the severed end of discarded filling still connected with the selvage. This end is cut by the Temple thread cutter a few picks after the bobbin change.

Meanwhile this end must not be whipped back into the cloth to make a similar defect to the one already described from a trailing end in the shuttle eye.

The Stafford Thread Cutter holds the severed end more firmly than any previous thread cutter.

It lifts this end out of the shuttle box and holds it away from any contact with the moving shuttle. Our pictures explain these two statements.

When finally cut at the selvage, the end falls away from all moving parts that might whip it into the cloth.



The Stafford Thread Cutter is as essential as the Midget Feeler in making good cloth.

The Midget Feeler reduced filling waste to the least possible amount.

The Stafford Thread Cutter eliminates seconds from whipped-in and trailing filling ends.

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No. 288. AUGUST, 1928.

HOW TO APPLY AND SET STAFFORD THREAD CUTTER

We have so many orders for the application of the Stafford Thread Cutter to old looms that we decided to devote this issue of Cotton Chats to directions for applying that device to old looms.

We have tried to make these directions so clear and explicit as to call for no explanatory illustrations. The pictures in our July issue, however, will help those who want to see how the parts look when assembled.

Those who already have this new thread cutter on their looms and want instructions for setting it can use these directions by following through and noting the way the parts should be applied and set. After doing this once, the few necessary requirements for fixing and setting these parts will be apparent.

This new thread cutter is another success in our constant effort to help the mills to make better cloth with less labor and oversight in weaving and less cost of production. Markets demand better fabrics. With our latest loom devices mills can meet the demand.

Applying and Setting the Stafford Cutter

Remove the old transferrer stud and all the parts on the stud. Also remove the old shuttle feeler thread cutter, front box plate, bunter and small end disc.

Apply parts for the new cutter as follows:

Fit the bunter on the lay by filing the chipping strip so that the bunter will rest on both the lay and iron lay end without causing any strain on the bunter.

Apply new front box plate and get shuttle running in the loom. New shuttles for this cutter have a hole near the shuttle eye for the cutter to enter. If new shuttles are not at hand, the old shuttle can be used by drilling two 1/2" holes as near each other as possible and trimming out with knife or chisel to make one hole 1/2" wide by 1" long. Drill first hole as near shuttle eye as possible without running into brass or iron eye, and have both in line with thread groove in shuttle.

Fix the new transferrer stud in the hopper stand. Assemble the new latch on the old latch stand and hang these on the new transferrer. Set transferrer on stud, using old transferrer spring, collar and cotter pin, and wind up transferrer spring in the usual way. If feed pawl does not hold the bobbin disc in its proper place, file the nub on the transferrer until it does.

Before applying any more parts, set the loom with the shuttle boxed on the battery side. Have a bobbin in the shuttle, but no bobbins in the battery. Lift up the latch, which is hung on the transferrer, so that it will engage the bunter; bring the lay to extreme front center and note position of the transferrer in relation to the bobbin in the shuttle. Then adjust the latch finger where experience shows that it should be set for proper transferring.

Apply the new shuttle feeler. It is set the same as any other shuttle feeler—with the proper protection so

that a bobbin cannot be transferred if the shuttle is not in the proper position to receive and hold the bobbin. File the spring hook if it interferes with the shuttle feeler. On our later looms this spring hook can be drawn back through an adjustment on the shuttle feeler finger.

Put filling slide lever, By 4955, on transferrer stud, having the end with a slot for an adjustable stud towards the loomside. By means of a double end spring this stud, which is to be left slightly loosened until later, is connected with the stud on the latch depressor. There is also assembled on By 4955 an adjustable end casting, By 4799, which acts as the arm to move the knife into cutting position.

Put the filling knife carrier bracket, By 4800, on the transferrer stud. This bracket should have assembled on it the filling knife carrier slide, By 4443, and the trip bracket, By 4806. Place the filling knife carrier, By 5015, with all cutter parts assembled on it, in the carrier slide. Set the knife, by adjustment of By 4443 if necessary, so that the open jaws of the knife will be central on the running thread in the thread groove of the shuttle. Set By 4800 laterally on the transferrer stud so that the knife will pass into the hole in the shuttle, allowing for such shuttle rebound as is possible within the limits of protection. Tighten set screw in By 4800.

Loosen bolt that holds slide lever end, By 4799, to By 4955 and press the end against the knife carrier with the stud of the carrier through slot in the end. Tighten bolt. The stud should move freely in the slot so that operation of the lever will carry the knife towards the lay.

Draw the lay forward and push the knife through the box plate and into the hole in the shuttle. With the points of the knife flush with the inside of the front wall of the shuttle, set the adjusting screw in By 5015 to act as a stop against the front box plate.

Set lay so that the bunter is 1/4" from the raised latch finger and push the knife stop against the front box plate; with the parts in this position, tighten the spring stud in By 4955, left loose when the slide lever was put on.

With loom now set with the shuttle on the battery side, shuttle feeler in position to transfer and crank on bottom center, place the knife closer hub, By 4454, on the transferrer fork stud and set screw it to the hub so that a line through the center of the square hole in the knife closer, By 4796, would intersect an extension of the center line of the stud in the lower filling knife.

Insert square-shanked knife closer arm in By 4796 with curved end down, pointing toward front of the loom and over the stud in the lower filling knife. With the knife fully open, set the closer arm so that there will be a small clearance between it and the stud as the knife carrier is pushed forward and back.

The filling knife trip, By 4801, held on the trip bracket, By 4806, is the device for opening the knife. It is set by adjusting the trip bracket to bring it to the proper position to cam the knife fully open as the thread cutter moves into position.

Be sure that the parts of the assembled knife are loose enough to operate freely, but tight enough to cut the filling and hold the severed end while it is lifted out of the shuttle box.

After the above setting turn the loom over by hand, operating the transfer and thread cutter parts slowly to make sure that the opening and closing devices are operating properly and that no parts are binding.

Tighten all parts securely. Put a very little oil in the oil holes of the knife carrier slide; and grease slightly any contact working surfaces that need it.

COTTON CHATS

TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA

DRAPER CORPORATION

HOPEDALE MASS.

No. 289. SEPTEMBER, 1928.

WHAT WE HAVE DONE TO HELP THE WEAVER

Have you ever stood by and watched your weaver when a loom stops?

The stop may be from a warp break, a slack end, a filling break, a shuttle misthread, a bang-off from an improper boxing of the shuttle or a Feeler stop, if the loom is running with a Feeler set to match the pick.

First of all she must push the shuttle firmly into the box—preferably into the left hand box—if it is not already there, and usually it isn't. Meanwhile she has discovered whether or not the stop was from a filling break, a misthread or a Feeler stop.

If it is not some form of filling stop, she moves the lay to bring the harnesses level and the crank into position for the draw-in. Then she looks for a warp break. If the stop motion has a detector wire, she uses this to press the Feeler Bar against first one bank of drop wires and then the other, passing her hand along the bank in each case to detect the locked wire.

If she fails to find one, she pulls the shipper on and holds it while the loom knocks off several times, when she knows the stop was not from a shuttle bang-off and goes on a second hunt for the slack or broken end.

It is the exception, of course, when it takes a long time to find the offending thread; but such exceptions happen often enough in any mill to cause a serious loss of production to both the mill and the weaver.

One of these exceptions happened the other day in our own plant.

We were showing one of our new loom devices to a party of visiting mill men when the loom stopped. The weaver went through just such a round of efforts to locate the trouble as we have described.

But the offending end was not detected.

There were several good weavers among the visitors and they joined the hunt.

Eventually the trouble was located on a slack end; but only after a puzzling delay, which at once became a text for a talk upon recent improvements in our No. 17 Sliding Bar warp stop motion.

Reducing the Work by More Than Half

If you have watched your weaver at work, we know you will agree that if we could relieve her of the work of pushing the shuttle into the box, we would effect a substantial saving of labor and time.

Our latest No. 17 Stop Motion does just this. It stops the loom with the shuttle firmly in place in the left hand box.

If we could eliminate the work of moving the lay to get the harnesses and crank in position for a tie-in, we would have another gain in time and labor.

Our No 17 Stop Motion brings the loom to a stop with harnesses and crank in proper position.

If the weaver could know as soon as the loom stops whether the break is in the warp or the filling, there would be another gain,—a most important one.

With the No. 17 Stop Motion she knows this at the first glance.

As the loom comes to a stop, the warp threads are separated and spread open at the broken or slack end, and an indicator shows the bank on which a wire is down. A touch of the finger upon the indicator increases the opening.

The weaver has only to pick up the broken end, tie it in and start the loom.

That is all when she has a warp fault—and that is a very simple performance when compared with all the motions she had to make with any stop motion ever used up to the time our No. 17 appeared.

And if the stop is not for a warp fault, she knows it as soon as she looks at the loom. There is no open place in the warp.

Tests show we have reduced the weaver's work on a loom stop by more than 50 per cent.

We have reduced her worries more than this. She can now work with a sureness and confidence that means much in the amount of work she can accomplish—in the number of looms she can run with ease.

Another New Device Helps

The No. 21 Stafford Thread Cutter eliminates other troubles that have always made work for the weaver.

It makes a clean and sure withdrawal of an ejected end from the eye of the shuttle. This prevents weaving in trailing ends. It lifts the severed end out of the shuttle box and holds it firmly until cut by the Temple thread cutter at the selvage. This prevents whipped-in ends—a common defect of present day weaving.

Both of these troubles have been annoying to the weaver. They require a close oversight that increases her

labor and decreases her efficiency and production. They reduce her wages because of a larger percentage of seconds woven.

These two perfected devices on the Northrop loom are good examples of our constant aim to aid the weaver and simplify her work.

To reduce her labor means profit to the mill—and increased wages for her if both are mutually inclined to take full advantage of the increased production these successive improvements make possible.

To reduce her worries means increased efficiency and better working conditions.

Our No. 17 Sliding Bar Warp Stop Motion and our No. 21 Stafford Thread Cutter contribute to both of these desirable results.

The Loom Does the Work

The former has reduced the weaver's work on a warp break to picking up the end, drawing it in, tying it and pulling on the shipper.

The loom now does the work she has been doing in bringing the shuttle home, in moving harnesses and lay into proper position, in hunting for the end down and in separating the warp for a speedy tie-in.

If the loom stops for something other than a warp break, she knows it at once. There is no uncertainty, no waste of valuable time looking for the trouble.

The Thread Cutter, by eliminating common weaving faults and insuring better cloth, reduces the amount of time spent in watching each loom.

Both devices can be applied to old looms to give practically similar results.

COTTON CHATS

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DRAPER CORPORATION

HOPEDALE MASS.

No. 290. OCTOBER, 1928.

LESS WORK FOR FIXERS AS WELL AS WEAVERS

Ten years ago it was the favorite indoor sport of a successful textile mill superintendent whose plant was equipped with Northrop looms to take visitors to a vantage point in his weave room and, with a proud sweep of his hand, say:

"Not many looms stopped. And most of the weavers are sitting down with nothing to do."

But one day his sense of humor led a Draper man to retort "Is that what you hire them for—to do nothing?"

Then the Draper man went home and began to think it out something like this:

"When we put out the automatic loom the industry accepted our rather arbitrary figures as to the larger number of looms a weaver could operate. These figures were fairly easily attained on some weaves; but not so easily at first on others.

"Years of growth have followed. The industry has learned better how to use the new machine. The machine has been steadily improved each year.

"A venturesome mill here and there has pushed the number of looms per weaver beyond the early standards. The great majority, content with the progress made, view their acheivements with pride. Why not? They set a goal, one often opposed by their help as impractical. They have attained the goal, with the help doing less work than ever before—so little in fact that they boast about 'nothing to do.'

"I wonder how far that 'nothing to do' is true; how much they could do in reason.

"Have the better loom we are building, the better preparatory processes now employed, the increased skill of both mill executive and machine operator in the use of the automatic loom outstripped the old standards? Are we entitled to set new ones?"

Said In Fun But It Started Something

That humorous retort and resultant thinking-it-out of ten years ago has since crystallized into what has been inappropriately named the "multiple loom system."

"Multiple" carries the idea of compulsion, of the doubling-up under the old arbitrary standards; of days when we asked how many looms the other fellow's weavers were running and went home and told our own weavers to do the same.

The present day answer to an inquiry on the number of looms a weaver should run is a frank:

"I don't know. Let's see what they are now doing in a day; how many times their looms stop; how much we can reduce the stops by new looms, by later devices for old looms, by better yarn preparation. These figures and the established fact that a weaver, assisted by a bobbin girl, can start up 30 looms per hour, will enable you to set the number of looms per weaver according to conditions that pertain in your own mill."

This attitude of the open mind, of decisions based on data obtained, has raised the number of looms per weaver beyond anything dreamed of heretofore. When one mill reached 54 looms, everbody else was skeptical.

Today, if a man dares in a gathering of overseers of weaving to boast of running anywhere from 70 to 100 looms per weaver, someone present is likely to say he is doing better than that.

Looms Per Loomfixer

The spotlight has been on the weaver's job. Less attention has been paid to the effect upon the labors of some other workers—the loomfixers for example.

Yet there hasn't been an improvement that made it easier for the weaver that did not also make it easier for the fixer. To increase product by keeping the loom running we have had to reduce stops for fixing as well as those calling for the attention of the weaver.

The new No. 17 Warp Stop Motion, Midget Feeler and Stafford Thread Cutter are outstanding mechanisms that have helped the weaver. All are more easily set, call for less frequent resettings and adjustments and need fewer repairs than older forms of these mechanisms.

This means fewer calls for the fixer on these new mechanisms.

We have made many improvements recently designed to help the weaver by keeping the loom running and the fixer away. These are of prime importance in figuring the work of the loomfixer.

The new brake with cork inserts was made to stop the loom with the shuttle in a certain position. To do this it had to be a good brake, one that does not get out of condition. The corks outlast a dozen of the old leather linings. Oil does not lessen their effectiveness.

Boxes for the two main loom shafts were formerly bolted horizontally to the loomsides. They are now set in

pockets on the loomside, resting on special shelves, to which they are vertically bolted with 9/16" bolts and lock washers. They do not loosen up, do not tip up on a bang-off and need little attention from the fixer. They "stay put."

The new replaceable bushings in the Rocker Shaft Boxes prevent wear on the rocker shaft and eliminate the fixer's old troublesome job of shimming up the Lay.

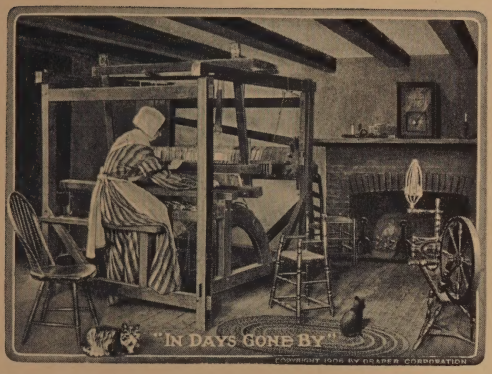
The No. 21 Battery with the swinging arm reduces the chance of a smash on a bobbin transfer and relieves the fixer of making frequent replacements of the bobbin support of the old Pelzer device.

Our new reamed yarn beam bearings can be oiled, thus preventing wear; hold the beam firmly, preventing "jumping" and the broken gears that result from it; bear upon the large part of the beam gudgeon, where wear will be less disastrous. They also allow the mill to continue to use beams now being thrown away because the small part of the gudgeon is worn down too much for the old style bearings.

Ask any fixer on older Northrop looms how much his work would be reduced if he had the bearings of his two main loom shafts securely anchored; if he did not have to replace worn rocker shafts or turn them and shim up the Lay to overcome the effects of wear; if he could depend upon his brakes and did not have to replace the brake leathers; if he did not have breakage of bobbin supports; if his yarn beams were held firmly and would not jump.

All these things have been accomplished in recent loom improvements—primarily to keep the loom running and producing cloth. We have frequently pointed out what they mean in reducing the work of the weaver.

They are equally effective in lessening the work of the fixer.



COTTON CHATS
TRADE-MARK REG. U.S. PAT. OFF. AND IN CANADA
DRAPER CORPORATION
HOPEDALE MASS.

No. 291. NOVEMBER, 1928.

A MILESTONE ON THE ROAD TO BETTER SPINNING

Thirty-two years after we secured our first Feeler patent we brought out the Midget Feeler in 1926.

In those 32 years we took out hundreds of patents on Feeler devices; designed and tested scores of Feeler mechanisms; and sold more than two dozen varieties.

The experience of those years enabled us to say in Cotton Chats of May, 1926: "The Feeler problem has been solved." Time has proved we were right.

Twenty-four years ago we brought out a new Rabbeth spindle with centrifugal clutch for the bobbin.

It was the first high speed spindle that held all bobbins at the same level, insuring equal yarn traverse and equal packages on bobbins; the first to remedy evils due to slipping and rising bobbins on solid whorls.

In spite of these good points and of proved value to good spinning of its basic principle of design, it had a few defects that have limited its possibilities.

From time to time since its introduction we have made progress in better design or construction.

Now we have a new centrifugal clutch spindle. Its Miller clutch for the bobbin is simple in design, free from mechanical defects, sure and effective in action.

With a confidence based on our years of experiment and development of this spindle, we are again moved to make a positive announcement to the industry:

The problem of the centrifugal clutch spindle has been solved.

Of Great Importance to the Spinner

This is an important development, we believe, in spinning machinery.

The basic idea of the centrifugal clutch spindle was sound. This has been conceded from the first.

Until now all mechanical devices based on the idea have had certain defects.

They were made for only one bobbin butt. Mills had to throw away all their old bobbins and buy new if they installed the centrifugal clutch spindle.

Moisture, lint and dirt could get under the leaves of the clutch and cause rust and clogging.

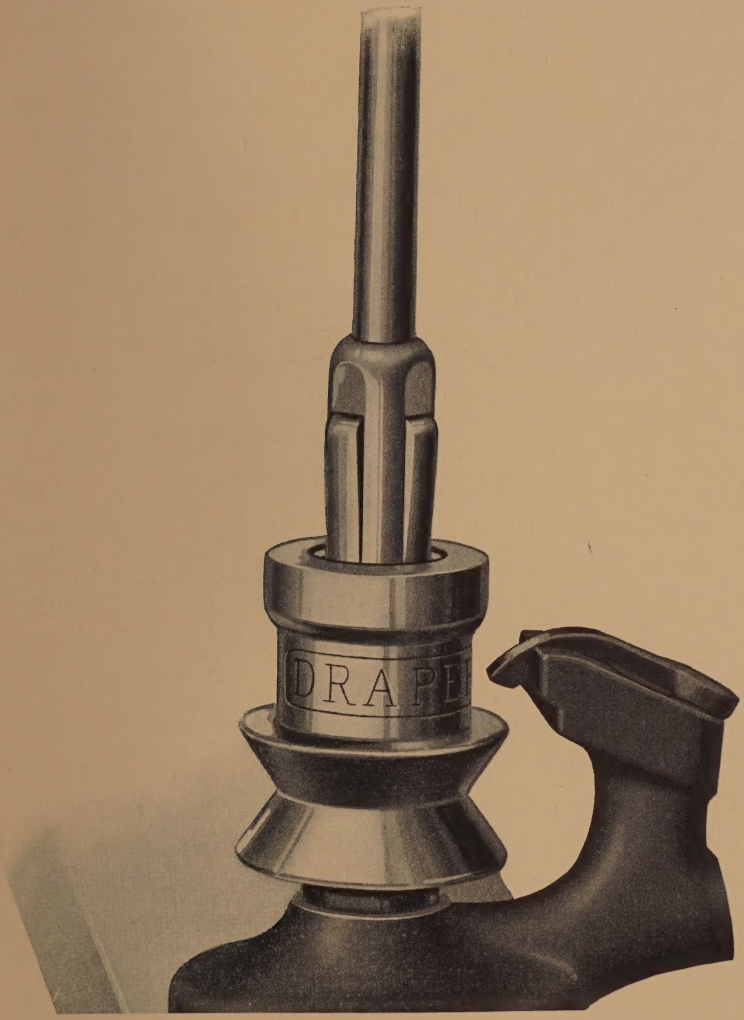
Removal of this lint and dirt and of waste yarn was difficult.

Repairs were expensive.

These Defects Overcome

The Miller clutch overcomes all defects of the old style Centrifugal clutch developed in 24 years of use.

It is made in sizes to fit any regular bobbin butt. It will take bobbins used on small Whitin or McMullan spindles; on our older type centrifugal clutch spindle; on the various D types of Draper spindles; and can be made for special sizes.



Centrifugal Clutch Spindle with Miller Clutch

A change to centrifugal spindles with Miller clutch may be made without any change in bobbins—except for reaming in a few cases.

The new clutch has no opening to admit moisture, dirt or lint. Leaves cannot be broken or displaced.

It is compact and durable. It will last as long as solid whorl spindles.

Doffing is easier than on any old type spindle.

Waste can be quickly and easily removed. The top of the bulb is slabbed to facilitate such removal. This is a patented feature and is important.

Spindles Should Be Replaced

It is known that a slight wearing away of the V of the spindle whorl makes spindles run at increased speed.

Recent tests made on a large scale have shown that variations in speed of spindles used several years are greater than supposed; that excessive twist and other yarn defects are so serious that hundreds of thousands of spindles all over this country should be replaced to restore economical and efficient yarn spinning.

In replacing worn spindles, the full benefits of the centrifugal clutch are now available. The only change needed is installation of spindles with the Miller clutch. This can be done gradually, if desired, as worn spindles are replaced. The old bobbin is retained.

Ideal spinning conditions, where new spinning is installed, may be obtained with tape drive whorls and Miller clutch spindles.

The centrifugal clutch spindle is the only spindle that spins equal yarn packages on the bobbin.

It is the only spindle that will always build the Feeler bunch an equal distance from the butt—essential if the Midget Feeler is to keep waste at the minimum of five or six yards.

It is the only spindle that never spins yarn over the butts and rings.

It is the only spindle on which bobbins never rise and wobble; on which bobbins never slip and run at slower speed than the spindle.